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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

THE HUXLEY LECTURE
on Diathesis. By Sir ARCHIBALD GARROD, K.C.M.G., D.M., F.R.S. 1113

ORIGINAL ARTICLES.
Light Treatment at the London Hospital. By J. H. SEQUEIRA, M.D., F.R.C.P., F.R.C.S., and W. J. O'DONOVAN, O.B.E., M.D., M.R.C.P. 1118
The Results of Ultra-violet Light Treatment. By ETHEL CASSIE, M.D. 1121
Induction of Premature Labour and its Justification. By G. W. R. THOMSON, M.B., B.S... 1123
The "Tonsil" Question. By FRED STOKER, M.B., F.R.C.S. 1125

CLINICAL AND LABORATORY NOTES.
Two Cases of Atypical Tetanus. By S. T. IRWIN, M.Ch., F.R.C.S. 1127
Recovery of Streptococcus Scarlatinæ from Experimentally Infected Books. By A. R. BALMAIN, M.B., B.S.. 1128

MEDICAL SOCIETIES.
Medical Society of London: Criminal Law and Insanity 1129
Royal Society of Medicine: Radiological Pitfalls... 1131
Society of Medical Officers of Health: Health Aspects of the Factories Bill 1132
Royal Society of Arts: Overcrowding in Public Conveyances 1134
Manchester Medical Society: Chronic Gastric and Duodenal Ulcer 1134
Edinburgh Obstetrical Society: Reduction of Maternal Mortality.... 1135

REVIEWS AND NOTICES OF BOOKS.
Gonococcal Infection in the Male. By Abr. L. Wolbarst, M.D. 1136
Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis. By Clive Riviere, M.D., F.R.C.P. 1136
Hygiene and Sanitation. By Prof. Jesse Feiring Williams, M.D. 1136
Chirurgie de l'Oeil et de ses Annexes. By Prof. F. Terrien..... 1137
Practical Nursing: Including Hygiene and Dietetics. By the late Herbert E. Cuff, M.D., F.R.C.S. 1137
The Skin: Its Care and Treatment. By Prof. Albert Strickler, M.D.. 1137
Recent Advances in Anatomy. By Prof. H. Woollard, M.D. 1137
Hypotension. By Prof. Alfred Friedlander 1138
The Electrophonoid Method of Zünd-Burguet. By Macleod Yearsley, F.R.C.S. 1138
A Pocket Guide to Medical Life Assurance. Compiled by Jehangir J. Curseţji, M.D., L.R.C.P. 1138

LEADING ARTICLES.
THE LORD CHIEF JUSTICE ON CRIME AND INSANITY 1139
LABORATORY BENEFIT .. 1139
MEDICAL WORK OF THE MINISTRY OF PENSIONS 1140

ANNOTATIONS.
A Year of Cancer Research 1141
The Use of White Lead in Painting 1142
The Story of a Pharmacy 1142
The Investigation of Otosclerosis 1143
Health Education of the Public 1143
Avertin 1144
Water Divining..... 1144
Prof. Pirquet's Visit..... 1144
Treatment of Hiccup with Carbon Dioxide..... 1144
Orthopædic Treatment in London 1145

MODERN TECHNIQUE IN TREATMENT.
CCLI.—The Treatment of Sea-Sickness. By G. H. ORIEL, M.D..... 1146

PUBLIC HEALTH SERVICES.
Reports of Medical Officers of Health: Liverpool.—Manchester.—Sheffield.—Leeds 1150
Infectious Disease in England and Wales.... 1153

SPECIAL ARTICLES.
General Medical Council: President's Address . 1147
Medicine and the Law: Unsuccessful Claim for Negligence 1148
Royal Society of Medicine: Annual Dinner..... 1149
British Institute of Radiology and the Rontgen Society 1149
Royal National Orthopædic Hosp.: New Out-Patient and Electrical Department.—(*Illustrated*) 1158
The Outbreak of Paratyphoid in West Hertfordshire 1159

THE SERVICES.
Royal Naval Medical Service.—Royal Army Medical Corps.—Indian Medical Service 1153

CORRESPONDENCE
Criminal Responsibility: Medico-Legal Divergence (Dr. E. D. Macnamara) 1153
The Nutritive Value of Bread (Prof. V. H. Mottram, Miss Gladys Hartwell) 1153
Residual Urine in Prostatic Enlargement (Prof. Charles A. Pannett) .. 1154
Treatment of Encephalitis Lethargica: A Suggestion (Dr. Andrew Balfour) 1155
Organic Hypnotics 1155
Extension of the Miller General Hospital (Mr. Harry A. Bone)..... 1155
Artificial Deformation of the Skull (Mr. Warren R. Dawson)..... 1166
A Disclaimer (Dr. Guthrie) 1166

PARLIAMENTARY INTELLIGENCE.
House of Commons: Treatment of Young Offenders.—Importation of Foreign Skimmed Milk.—Pithead Baths.—Accidents at Mines.—Cost of Food in Poor-law Establishments.—Vitamin A and Food Values.—Lease of Bellahouston Hospital.—Government Lymph Stocks 1159

OBITUARY.
George Cowell, F.R.C.S... 1156
Jonathan Dalgliesh, M.R.C.S. 1156
Wilfrid William Pearse, M.D., D.P.H. 1157
John Carlyle Johnstone, M.D. 1157

MEDICAL NEWS.
University of London.... 1162
University of Glasgow .. 1162
Crewe Memorial Hospital 1118
University of Manchester 1118
Elizabeth Garrett Anderson Hospital 1141
Birmingham Hospitals .. 1141
Exeter Orthopædic Hospital 1145
Wembley Hospital Staff.. 1145
Royal South Hants and Southampton Hospital 1153
Housekeeping in Institutions 1157
Royal Halifax Infirmary 1157
Royal Sussex County Hospital 1159
Observation Wards at Bow..... 1162
Royal Institute of Public Health 1162
Royal Medical Benevolent Fund Guild 1162
College of Pestology..... 1162
Fellowship of Medicine and Post-Graduate Medical Association ... 1162
College of Physicians of Philadelphia..... 1163
Inns of Court..... 1163
Maudsley Hospital 1163
Society of Medical Officers of Health..... 1163
Staff of Princess Louise Kensington Hospital for Children 1163
Proceedings under the Lead Paint Act 1163
Irish Medical Schools and Graduates Association. 1163

NOTES, COMMENTS, AND ABSTRACTS.
Enforcement of Vaccination Laws in County Wexford 1165
Sickness and Life Assurance for Medical Men.. 1165
Pneumococci in Mice.... 1166
Needles for Record Syringes 1166

Medical Diary 1164
Appointments 1164
Vacancies..... 1164
Births, Marriages, Deaths 1165

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Delivered at Charing Cross Hospital on Nov. 24th, 1927,

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REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD; CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

"Men are called healthy in virtue of the inborn capacity of easy resistance to those unhealthy influences that may ordinarily arise; unhealthy in virtue of a lack of that capacity."

THIS passage from Aristotle's Categories,[1] written 2300 years ago, may well serve as my text to-day. We all know what we have in mind when we speak of health and disease, but it is not easy to frame definitions which shall embrace all that these terms denote. We still need to pay heed to the warning of that great teacher, Thomas Watson,[2] that disease must not be regarded as "a thing, or as the phrase goes, a separate entity, by which the body is possessed and damaged—something which can be contemplated as apart from the body which it may invade."

As Aristotle's definition suggests, the state which we call health is one of unstable equilibrium, maintained by means of a continual struggle, and no mere quiescent phase. Thus, in a recent lecture, Andrewes[3] spoke of the healthy body as one which "is not only perfectly adjusted to its surroundings, but is capable of adjusting itself, within reasonable limits, to the circumstances of a rapidly changing environment." Disease, on the other hand, he defined as "a condition in which the body has fallen, in lesser or greater degree, out of harmony with its environment." Another recent writer, Draper,[4] defines disease as "an expression of reaction between a complex set of external circumstances, and an equally complex organism striving to survive in the midst of them." No narrower definition will suffice to include, as it needs must do, such widely different clinical and pathological pictures as those of small-pox, malaria, scurvy, and myxœdema.

It is obvious that, as the word implies, disease is something appertaining to the patient, and is neither an invading organism nor a poison introduced. Many of the outward signs and symptoms by which we recognise diseases are evidences of the struggle which the organism is putting up against enemies which beset it; and as Andrewes pointed out in the lecture from which I have quoted, even inflammation and fever may be regarded as beneficial reactions. Bacterial infections do not necessarily cause disease, only "when the body begins to defend itself against attack does trouble arise." Nor must we forget, as we have been apt to do in recent years, that not all maladies come from without; although the manifestations of those which do not are often provoked by external influences, trauma, exposure, and the like.

It is an indisputable fact, which has been recognised from early times, that some individuals, members of some families, and of some races of mankind, are far more liable than others to suffer from particular maladies; and around that basal fact have grown up the various doctrines of diathesis.

For some writers diathesis was nothing more than a predisposition to this or that malady; for others it was itself an extremely chronic disease, which, like the hidden mycelium of a mushroom bed, manifests itself here and there, and from time to time, by outward signs. Others, again, gave a wider significance to the term, as a liability to a group of allied affections, and spoke of an arthritic or a strumous diathesis. Some held that a diathesis might be acquired, but it was usually regarded as an inborn peculiarity. Lastly, there have always been those who have looked upon the term diathesis as merely a cloak for ignorance, a name masquerading as an explanation.

In medical writings of the first half of the nineteenth century the subject figured largely, and among its foremost exponents in this country were Jonathan Hutchinson,[5] and Thomas Laycock,[6] whose teaching had so wide an influence in the Edinburgh School. The earlier writers claimed as diathetic diseases maladies which, as we now know, have hardly anything in common, some of which are due to bacterial or protozoal invasion, whereas others are due to the lack of some essential factor in diet.

Nor is it to be wondered at that the conceptions of our fathers regarding this subject seem to us obscure, nor that when we read what they wrote upon it we seem to wander in a fog; for when their doctrines were formulated the theory of evolution had not yet emerged; the existence of chromosomes and the importance of the germ plasm were not suspected; the laws of heredity were quite unknown, and hormones and vitamins had not been heard of. We who hold the keys, which they helped to cut, to fields unexplored by them, are well able to appreciate the pitfalls which lay in their path.

The coming of cellular pathology, and above all the growth of bacteriology and protozoology, turned men's minds into other paths. Attention became concentrated upon the agents of disease rather than upon the constitutional factors, which latter received but scant attention; the very conception of diathesis was discredited, and the word itself was relegated to the scrap-heap of obsolete terms, together with such words as "idiopathic" and "strumous."

Now, once more, the pendulum is returning from the limit of its swing; interest in "constitution," which word has, to a large extent, replaced "diathesis" and with a wider connotation, is reawakening more perhaps in other countries than in our own. A large literature in the German tongue has appeared in the past few years, and to Naegeli's[7] writings, and to the work of Julius Bauer,[8] a veritable storehouse of ideas and facts, I would express my indebtedness. In America constitutional clinics are being established, notably that of George Draper, in which valuable work has already been done. In this country Hurst,[9] Ryle,[10] and Maitland Ramsay[11] have, by their discourses, quickened a new interest in the subject.

Despite the fact that in the New English Dictionary diathesis is defined as "a (permanent or acquired) condition of the body which renders it liable to certain special diseases or affections; a constitutional predisposition or tendency," we are little inclined to-day to admit as constitutional states or diatheses, conditions, however long-lasting, which have been acquired; and in this lecture I shall speak of inborn conditions only.

When I was honoured by the invitation to deliver this Huxley Memorial Lecture in Huxley's own medical school, I determined that I would try to sketch the doctrine of diathesis as it appears in the light of recent advances of science, and to emphasise once more the importance of constitutional factors in connexion with the incidence and shaping of maladies. With that aim in view I would ask you to detach yourselves, as far as may be, from the medical standpoint, and to avoid, for the moment, the taking of sides in the struggle between man and his diseases.

There are two main paths by which my subject may be approached: First, by statistical and anthropometric methods, on Galtonian lines. This method is being pursued in Draper's clinic. Draper, who aims at approaching his subject from four different directions—the anatomical, physiological, psychological, and immunological—compares these to the four panels of a Japanese screen, which, although distinct, form parts of a single picture.

The second path is by study of particular examples, and of the light which they throw upon the general

problem. This might be styled an experimental method, but the experimenter is not man but Nature. It is along this second path that I invite you to walk with me to-day.

In pursuit of our inquiry we need to carry our thoughts back very far, to the chromosomes into which, in the words of J. B. Leathes,[12] "are packed from the beginning all that pre-ordains, if not our fate and fortunes, at least our bodily characteristics, down to the colour of our eyelashes." In the illuminating address from which I have quoted, Leathes spoke of the chemical aspect of evolution as follows: "The deposition of matter in molecules or aggregates, unstable or incalculably variable, that has and retains the power of determining the deposition of matter not yet so disposed, in such a way as to conform to its own deposition, or to patterns which help it to exercise this power, is all that must be premised for the whole of evolution to follow." Such a conception would certainly not have been rejected by Huxley,[13] who as long ago as in 1876 said that "to be a teleologist and yet accept evolution it is only necessary to suppose that the original plan was sketched out—that the purpose was foreshadowed, in the molecular arrangements out of which the animals have come."

It cannot fail to be that natural selection works through chemical as through structural modifications, nor can it be doubted that, as Huppert [14] maintained 30 years ago, the features in which an organism differs from type are foreshadowed in the germinal cells, and indeed in the complex molecules of which the germ cells are built up. As evolution proceeds, from the single cell to the nations of such units which constitute higher animals and plants, the somatic cells of which the various tissues are built up become specialised for the several purposes which they have to serve, the renal cells for their work and the hepatic for theirs, and in so doing lose at first part, and later almost the whole, of the power which the primary cells possessed, of reconstruction and repair of tissues; such repairs as are possible are carried out by the wandering cells of the mesenchyme. Only the germinal cells retain the power of reproducing all the tissues and structures of the body, which renders possible the propagation of the species. Whatever may happen to the somatic cells affects the individual, but not the future of the race. Just as in a hive the worker bees are specialised for the carrying out of their appointed tasks, but have no share in the continuation of the race, save in so far as they care for the fertilised queen; so may we think of the somatic cells as waiting upon the needs of the germ plasm.

There is nothing at rest in the living cell, nor in the molecules of which it is composed, nor even in the atoms, with their restless electrons, which go to the making up of those molecules; and in the complex of physical and chemical changes which we call life there are infinite opportunities for departure from type. As evolution proceeds organisms are produced which differ in chemical structure as well as in form, until the proteins of a group of living things become so far differentiated that they behave as foreign proteins to members even of kindred groups. When that stage is reached interbreeding is no longer possible, the species has become established, and its main characters are thenceforward maintained.

As the organism becomes more elaborated there are ever-increasing opportunities of departures from type. As Andrewes says, "a chronometer can suffer from a greater variety of defects than an hour-glass."

Each one of us, and each such departure which he exhibits, is one of Nature's experiments. Huxley,[15] in an address delivered to the International Medical Congress in 1881, after speaking of the vital phenomena which furnish the normal and typical characters of the species, added: "Outside the range of these conditions the normal course of the cycle of vital phenomena is disturbed; abnormal structure makes its appearance, or the proper character and mutual adjustment of the functions cease to be preserved. The extent and importance of these deviations from the typical life may vary indefinitely; they may have no noticeable influence on the general well-being of the economy, or they may favour it. On the other hand, they may be of such a nature as to impede the activities of the organism, or even to involve its destruction."

It is with unfavourable deviations that the student of diathesis is concerned; but if there were no beneficial ones there would be no evolutionary advance; progress could go no further; the species could, at best, be saved from regression. Unfavourable modifications tend to be eliminated, because they diminish the capacity of the organism to conform to its environment; and among the factors at work in the elimination of the unfit none is more potent than disease.

A new departure may be both good *and* bad, and if the advantage outweigh the disadvantage it may persist. Thus when man assumed the erect position, and gave up the hammock-like support of the abdominal viscera which is an essential part of the vertebrate plan, he thereby laid himself open to a number of minor ills, varicose veins, herniæ, and the like; but the loss was as nothing compared with the gain, which was no less than the mastery of animate nature on this planet.

Modifications acquired during the lifetime of their subjects, as results of disease or accident, do not come within the scope of our inquiry. That they are not transmitted to future generations a great mass of evidence testifies; they concern the individual only, and not his family or race.

Mutations, the steplike variations which originate in the germ-plasm, and are transmitted, are produced by addition to, subtraction from, or alteration in the factors of inheritance already present. The departure from type may be very slight, or so great as to justify the use of the term *per saltum*. Goodrich [16] pictures what may happen to a complex molecule by removal of an atom, or of an atomic grouping, and adds: "In some such fashion do we imagine the changes occur in the factors of inheritance." Lenz [17] carries the same conception a step further, and suggests that on a physico-chemical view of the germ-plasm it is not to be expected that it will undergo smooth, continuous changes, but rather that it will be changed in lesser or greater steps, by the removal or shifting of the positions of molecular groupings. I would venture one step further still, and point out that we know, from experimental breeding of Drosophilia, that the same mutation may originate over and over again, in the same species; just as a given chemical reaction will be repeated as often as the necessary conditions are reproduced.

Some mutations are dominant in Mendel's sense, and others recessive; but the study of human inheritance on Mendelian lines is beset with many difficulties. For obvious reasons the proportions of normal and abnormal members in the small human families supplies little accurate information, as compared with that afforded by the experimental breeding of plants and animals; and we are often driven to apply the knowledge which has been gained by such breeding experiments to human problems, despite the lack of numerical checks.

Thus, albinism, a mutation common to man and lower animals, is shown, by experimental breeding, to be recessive, and the peculiarities of its incidence in man supply clues for the recognition of the recessive character of some other human mutations. We learn that a peculiarity which is wont to appear in several children of normal parents, and with quite unusual frequency in children of consanguineous matings, may be regarded as recessive. For, as Bateson pointed out long ago, a rare recessive character, to which both parents must contribute recessive genes, is far more likely to appear when parents are both members of a family which carries

the recessive factors; and the rarer the anomaly the higher should be the proportion of such matings among the parents of those who exhibit it. Again, mutations which are transmitted through normal females to the males are regarded as sex-linked recessives.

On the other hand, a character which is handed down in a family from generation to generation, and affects a large proportion of its members, is probably dominant.

Some of the inborn and hereditary characters which originate as mutations are more obviously concerned with the structure of parts and others with their functions, and it will be convenient to consider them under these headings, but not to assume a sharp line of division between them. For if, indeed, all the potentialities of the future organism reside in the molecular arrangements of the germ-plasm, we must assume that even structural anomalies have a molecular basis; and how greatly chemical factors may modify form is revealed by the study of disturbances of the endocrine balance. Keith [18] has emphasised this, and not a few zoologists, notably Goodrich,[19] are prepared to admit the influence of chemical factors upon animal structure; but we must be careful not to press such analogies too far, for it is obvious that the malformations by defect or excess have little in common with the modifications of facial contour and bodily proportions which result from endocrine disturbances.

No two individuals of a species are exactly alike, and even monoval twins differ in their finger-prints; nor are the differences chiefly in structure. We human beings differ in a thousand ways, in form, in chemical life, in mental methods. Of many of the minor differences few of us are even aware, and each of us is apt to think of himself as normal. In a mixed population such as ours all sorts of factors contribute to the average of the race and to its morbid liabilities. The time of life is not without influence; the child has his own special maladies, and his points of least resistance are not the same as those of the adult. Old people, too, have their special diseases, and age confers a comparative immunity from others. Indeed, we are faced with a problem of great complexity when we attempt to unravel the strands which go to the making of man.

Structural mutations are of all degrees. Some are, doubtless, improvements, some may be classed as unimportant, others again are obviously detrimental, and some, the most extreme, are incompatible with survival. Minor malformations may be harmful in virtue of disfigurement which they cause, or because they increase the risks of accident. When an important organ is malformed its function may be impaired and so life may be endangered, as witness the graver cardiac defects and cystic disease of the kidneys. Once more a malformed part may prove a *locus minoris resistentiæ*; malformed cardiac valves are specially liable to be the seats of malignant endocarditis.

It would be easy to collect a number of examples of morbid effects of structural malformations, but a very few must suffice. In his book on the "Pedigree of Disease," Hutchinson cited spontaneous dislocation of malformed joints, and the liability to intussusception which results from cæcal mesentery. Of far wider importance is the view put forward by Hurst, who attributes the X ray appearances of the so-called hypertonic and dropped stomachs, with the attendant differences in the gastric secretion, to differences in the shape and length of the stomach. But it is something more subtle than the influences of anatomical anomalies which we have in mind when we think of diathesis or of constitutional liabilities to disease, and I do not propose to dwell further upon that aspect of the subject to-day.

In the borderland between structural and functional anomalies lies a large group of diseases of which I propose to speak under the name of tissue defects, seeing that they exhibit changes, not in any individual structure or organ, but in special tissues. To one large and important group of these, often spoken of as heredo-familial diseases of the neuromuscular system, Gowers,[20] whose teaching was wont to suggest to his hearers fresh outlooks and new lines of thought, assigned the name of "abiotrophies." Although inborn, the maladies in question do not, as a rule, show obvious signs until after several years of life, and thenceforward are progressive. Gowers pointed out that in some of them at least the nerve or muscle cells wither away, like plants without soil, to be replaced by fibrous tissue, "tissue weed" as he called it. Some of the abiotrophies are dominants, such as Friedreich's ataxia; some are recessives, and pseudohypertrophic muscular dystrophy is a sex-linked recessive, transmitted by normal mothers to their sons.

The period of onset of such maladies is usually much the same in members of the same generation, but there is a tendency for the onset to be earlier from generation to generation. As Mott suggested, in another connexion, diseases which so behave tend to eliminate themselves—a virtuous circle, so to speak—but a sex-linked recessive ensures its own persistence.

The boundaries of the several diseases of the group are not always clearly defined, and examples of more than one abiotrophy are met with in different members of the same family. In some cases of the myopathies defects of individual muscles are met with, and in others areas of change have been found in muscles not obviously involved.[21] Of less importance, save as indications of structural instability, are the miscellaneous malformations which are occasionally met with in association with an abiotrophy.

It has been pointed out by Martius, Julius Bauer, and others, that the abiotrophies are not limited to the neuromuscular system, and we are probably justified in including in this class certain maladies based upon hereditary abnormalities of the blood corpuscles, red and white, and especially congenital hæmolytic jaundice. The brittleness of the red corpuscles in cases of that disease was first observed by Chauffard, and is well known; Naegeli also has observed that the erythrocytes, which in the microscopic field appear to be microcytes, are found, nevertheless, to exceed normal corpuscles in volume; whence he concludes that they are more globular in form.

Naegeli [22] regards the abnormality of the red corpuscles as the primary feature of the condition, which may only manifest itself by obvious signs under the influence of external stimuli such as infections or toxic agents. The hæmolysis and splenic enlargement he regards as secondary phenomena; and it is a well-known fact that the fragility and abnormal form of the red corpuscles persist, in greater or less degree, after removal of the spleen. It should be mentioned, however, that there are those who hold that the primary trouble is in the spleen, and that the abnormality of the corpuscles is secondary thereto. Congenital hæmolytic jaundice is a typical family anomaly, and behaves as a dominant Mendelian characteristic.

As tissue defects may also be classed certain conditions characterised by fragility of the bones. The warning signal of the best known of these is a blue colour of the sclerotics, owing to a defect of the fibrous tissue of the sclerotics which allow the choroidal pigment to show through them. The anomaly has been met with in large numbers of members of the affected families, and in successive generations. As they grow older the affected members, who generally give a history of repeated fractures of bones on slight provocation, tend to develop otosclerosis—an interesting example of the development of a progressive disease, otosclerosis, in the subjects of an inborn anomaly. The fragility would not appear to be due to any deficiency of lime salts in the bones, but to a defect of the mesenchyme, with a disturbance of connective tissue formation.

More recently it has been revealed, by X ray examinations, that in certain subjects the fragile bones cast uniform dark shadows, as if solid throughout, as indeed they are in some cases. The fragility is ascribed to loss of elasticity, and perhaps to loss of tubular structure. The condition which behaves as a recessive character, and has been met with in children of first cousins, with undue frequency, is probably progressive, for various degrees of obliteration of the medullary cavities have been described. In advanced cases enlargement of the spleen and lymphatic glands has been observed, presumably to compensate for loss of bone-marrow.

Of even greater interest, from our point of view, is the strange malady known as myositis ossificans progressiva. This, too, seems to be an anomaly of the mesenchyme, and Bauer suggests that the cells of the mesenchyme retain, in the subjects of this disease, the power, which they normally lose, of producing bony tissue. The bony formation occurs in the connective tissues in and around the affected muscles. Two features of myositis ossificans call for special mention. The first is the association with it, in more than 70 per cent. of all cases, of congenital deformities of the great toes, and in some cases of the thumbs also. The nature of the deformity is not so constant as its seat, but the digits are usually shortened, by suppression of a phalanx or by fusion of phalanges. This association is obviously something quite different from the occasional coexistence of miscellaneous malformations not infrequently met with; but it is difficult to surmise what is the nature of the link between the malformation and the malady. The second point is scarcity of records of hereditary transmission of myositis ossificans. A few instances of its transmission are known, and in one remarkable case a father who had the digital deformities, but no myositis, had a son with identical deformities who developed myositis in childhood.

The tissue defects under discussion bear eloquent witness to the importance of constitutional factors in disease, but they have not in the past played any part in discussions on diathesis. Many of them, indeed, were little known, if known at all, when the earlier writers were occupied with the subject. They teach the important lesson that diseases which develop in later childhood, or even during adult life, may have as their underlying causes inborn anomalies of the germ-plasm which may have been completely latent in earlier life, or may have shown a warning sign, such as blue sclerotics or the digital deformity of myositis ossificans. Nevertheless, they do not conform closely to the conception of diathesis; they are, on the surface, too inevitable.

In the abiotrophies the tissue defects are the most potent causative factors, and the influence of external exciting causes is minimal. It may be that, as Rosenbach suggested, the vitality of the tissues involved is so low that even normal function overtries it. Such evidence as we have, up to now, as to the condition of the affected cells is almost wholly histological, and we do not know whether the trouble be due to some defect in the constitution of the cells themselves or to some abnormal substance in solution in the body fluids. The former appears the more probable explanation, and we possess one clue which may prove to be important—namely, the brittleness of the red corpuscles in congenital hæmolytic jaundice, and their peculiarities of size and form. These are clearly independent of the medium in which they are suspended, and as far as I am aware, it has not been ascertained whether normal red corpuscles are rendered brittle by contact with the serum of a subject of the disease.

On the other hand, it can be established beyond doubt that, in individuals whose metabolic processes are in some way deranged, the presence in the tissues of an abnormal product of metabolism, or of a normal product in undue quantity, may give rise, under adequate provocation, to morbid effects of greater or less gravity. Here, indeed, is realised the underlying idea of most of the earlier conceptions of diathesis or predisposition; as of an intermediate state which, in the words of Germain Sée,[23] "n'est pas encore la maladie—mais qui n'est déjà plus la santé parfaite," and which Jonathan Hutchinson described as "a condition of prolonged peculiarity of health, giving proclivity to definite forms of disease."

In a lecture delivered as long ago as in the year 1855, W. H. Walshe [24] spoke of diathetic diseases as "apparently generated and sustained by an intrinsic blood poison, resulting from some perversion of the nutritive processes of the individual, a suggestion much in advance of the time at which it was uttered; but in the list of diathetic diseases which followed there were no signs of such prescience. In it were included maladies of almost every class.

If we are prepared to look upon the life of animals and plants as a complex of physical and chemical processes, and to recognise the importance of chemical factors in evolution, as was emphasised by Leathes in a recent address, we are bound to admit that the morbid predispositions of human beings depend, to a large extent, upon their chemical build and chemical life. Nor can we escape the conclusion that seeing that differences can be shown to exist, some obvious and some subtle, in the metabolic processes of creatures of different genera and species, there must be differences of like kind, but of less degree, between the individual members of a species.

We should expect chemical mutations to be less obvious than those of form, but it is probable that they are not less numerous. A systematic search for such mutations would involve elaborate metabolic studies of large numbers of individuals, and much of the labour expended would probably be in vain. But just as one who carried out a systematic scrutiny of currency notes would not fail to pick out a note with a wrong watermark, or one printed upon discoloured paper, so some metabolic anomalies attract attention because they give some conspicuous sign, or, as in the case of pentosuria, are detected by response to some routine test in general use.

Some of the more conspicuous anomalies give rise to serious troubles sooner or later; and by the study of the more obvious errors of metabolism we gain insight into the possible effects of such deviations from the specific type; and by learning how a lesion or syndrome is produced in the few cases we may gain a notion of the mode of its production in the many. In most instances the victims of metabolic anomalies show no morbid signs until the appropriate exciting cause comes into play, just as a sufferer from Raynaud's disease may spend his life in the tropics unaware of his infirmity, which is revealed when he comes to a cold climate.

Among the diathetic diseases enumerated by Walshe cystinuria has a place. This anomaly had been known for half a century previously as a cause of calculus formation. We now know that cystin is one of the most important of the fractions of which protein molecules are built up, the bearer of the sulphur which they contain. Cystinuria is the sign of an error of protein metabolism in which other protein fractions are involved. A subject of this anomaly may live his life in ignorance of his infirmity, whereas a brother, similarly affected, may suffer almost continuously from calculous troubles, often in an aggravated form. Cystin, in virtue of its insolubility in acid urine, is eminently suited to form calculi, and given the necessary exciting cause, probably an infection of the urinary tract, the cystinuric will form stones. The presence of the crystalline deposit may favour the infection of the tract. Apart from this the anomaly has no obvious ill-effects, even when tyrosin, leucin, cadaverin, and putrescin are being excreted together with cystin.

Gout may be regarded as a diathetic disease par excellence, and it has found a place in all lists of such maladies. That it is hereditary has been known from ancient times, and it manifests itself by recurrent

paroxysms, separated by intervals of apparent health. Like cystinuria, gout may be described as a tragedy of insolubility; for it is hard to doubt that the tendency of uric acid to be deposited in the tissues as crystalline sodium urate is the leading factor in the attacks, as witness the tophi so often seen in the ears of its victims, and not seldom in and around their joints. Many factors contribute to provoke the attacks, such as seasonal influences, indiscretions of diet, overstrain, and injury; and the seats of the lesions are determined by traumata recent or remote, and even the special liability of the toe-joint is probably due to the repeated mechanical insults endured by the only joint upon which we press in walking. Gout in a hemiplegic patient attacks the joints of the paralysed limbs. In some members of gouty families very trifling provocation suffices to determine an attack, whereas in the immune a flagrant combination of all the exciting influences are powerless to do so.

The pathology of gout is hardly less obscure to-day than when my father found uric acid in the blood of gouty subjects 80 years ago. The majority of those who have worked at the subject hold that the underlying factor is an error of purin metabolism, but as to the nature of that error they do not agree. Others still maintain that the primary fault is one of excretion of uric acid, due to a defect of renal function. On analogy the former explanation appears the more probable, but the evidence for renal origin cannot be dismissed lightly. It is a well-known fact that the excretion of endogenous uric acid, which is independent of diet, varies rather widely in different human individuals, and a systematic study of the amounts of uric acid in the blood and urine of children of gouty parents should yield interesting results. This much is certain, that in gout we are confronted with a highly hereditary malady, presumably based upon an inborn defect, the manifestations of which seldom appear before middle life.

The familiar osteo-arthritis of later life, which appears as the hip-joint disease of elderly people, Heberden's nodes and the like, is often ascribed to an injury, or severe wear and tear, and an infection may be a contributory factor. In the great majority of instances there is no obvious underlying cause, but in a few instances at least the primary cause is an error of metabolism. Alcaptonuria, the rare hereditary error of protein metabolism which is characterised by the presence in the urine of an aromatic acid, homogentisic acid, derived from tyrosin and phenylalanin, was long thought to entail no evil effects. But we now know that at the age of about 30 years the subjects of this anomaly show signs of blackening of cartilages, and later in life they develop osteo-arthritis. In these cases the articular disease shows peculiar features, such as a pronounced stoop due to implication of the spine and a characteristic gait, which are sufficient in themselves to rule out a chance association, and in some families, notably one which Umber has described, the joint trouble picked out the alcaptonuric members, whereas the normal brothers and sisters escaped. Here we have still more conclusive evidence that the morbid effects of an inborn error of metabolism may be very long postponed.

To take one more example. It is a familiar fact that individuals of the human race differ widely in sensitivity to light and other forms of radiant energy, and that there have been evolved protective measures, such as pigmentation, and to a less extent, hirsuties. Whereas the available evidence shows that exposure to light is usually beneficial, we also know that in certain cases exposure to light gives rise to diseases of the skin, and even of the deeper structures also. It has been shown, moreover, that the introduction into the tissues of certain pigments, for the most part fluorescent substances, of which eosin is one, may render an individual acutely sensitive to light. The pigments of the porphyrin group possess, for the most part, this power, and such a pigment is present, in traces, in the tissues and excreta of normal men. It is a tempting hypothesis that these traces may play an important part in connexion with the physiological actions of light and of ultra-violet rays.

In rare individuals porphyrins are present in excess, and are excreted in abundance in the dark red urine and in the fæces. The bones become deeply stained, and the teeth also in some cases. Such hæmatoporphyria is congenital and recessive. Its victims are pitifully hypersensitive to light. When exposed to bright light they develop a skin eruption known as hydroa vacciniforme, which produces deep scars, and brings about grave mutilation by destroying the tissues, blindness, and even trouble in deeper structures such as rigidity of the digits and deformity of the hands. All these troubles may be avoided by protecting the patient from light.

It seems certain, on the other hand, that hæmatoporphyria congenita is not the only cause of hydroa vacciniforme, nor even its commonest cause; but it is significant that when cases of that affection are collated, the sex-incidence and mode of heredity of the whole series closely resemble those of the porphyrinuric cases alone. It seems probable that in the cases without porphyrinuria the underlying cause is some other metabolic derangement, or even several such, and that in the sensitivity of hæmatoporphyrics to light we have a special illustration of a law of wide application.

In the conditions which have been referred to there is present in the tissues some unusual chemical product, or a normal metabolic product in excessive dose, in consequence of an abnormal arrest of metabolism, which arrest is probably due to lack of some individual enzyme, the task of which remains undone. But just as lack of a vitamin or a hormone may bring about untoward results, so it would appear that the mere absence of an enzyme may in itself be the underlying cause of morbid developments. Thus albinism probably results from the lack of the enzyme which brings about the formation of melanin; but a much more striking example is afforded by that grave and remarkable disease, hæmophilia, a typical sex-linked recessive, the essential cause of which appears to be absence of a coagulative factor. Hurst has suggested that constitutional achlorhydria, which is met with in young children, tends to run in families, and was detected by Bennett and Ryle in four out of 100 healthy students, is due to an inborn error of secretion, and I have little doubt that, as time passes, the part played by hereditary chemical defects in providing the substructure of disease will prove to be much greater than, in the present state of our knowledge, it can be shown to be. On the other hand, we need to beware lest such phrases as "error of metabolism," used without real justification, may become convenient cloaks for our ignorance.

The further we pursue the study of diathesis the more clearly do we realise its many-sidedness. New facets present themselves at every step. Of some of these the passage of time forbids me to say anything, and to others I can merely allude. For example, it is by no means easy to draw a dividing line between diathesis and idiosyncrasy. Into the category of idiosyncrasy falls the remarkable hypersensitiveness to particular proteins which is so closely linked up with the causation of urticaria, the erythemata, intermittent hydrarthrosis, and some forms of asthma.

Again, I have said little of the converse of diathesis, the benign mutations which favour the individual in the struggle for existence. Difficult as it is to detect an error of the body chemistry by its evil effects, which may be so long postponed, it must needs be more difficult to detect those which are harmless or have only good effects. Yet we can see how such favourable mutations have been utilised in the building up of the defensive mechanisms which are ready to be brought into play to counteract a poison introduced

and which confer upon some individuals and on the members of certain families an inborn immunity, partial or complete, from various infectious maladies. Nor have I said anything of what Draper calls the psychological panel; the profound influences exerted by and through the nervous system in connexion with what are spoken of as functional maladies, and the instability of the nervous system which is not uncommonly an inherited quality.

Indeed, this lecture of mine is like a jig-saw puzzle, some bits of which have been pieced together, into groups which foreshadow the picture of which they form parts. But if it shall have served to throw any light upon the factors which underlie the conception of diathesis, or shall help to reawaken interest in the constitutional factors which play so important a part in the incidence and shaping of disease, it will have attained its aim. Nor has it been wholly divorced from the practical side of medicine as the healing art; for it stands to reason that the better we understand the susceptibilities of our patients, the better we shall help to stay, what Francis Galton [25] called, "the steady and pitiless march of the hidden weaknesses in our constitutions through illness to death."

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CREWE MEMORIAL HOSPITAL.—This hospital is being extended at a cost of £15,000. At the laying of the foundation-stone last week over £8000 was subscribed, and a cheque for £2500 has been received from the London, Midland and Scottish Railway.

UNIVERSITY OF MANCHESTER.—It is announced that the late Prof. Alfred Mica-Smith has left £1500 to found a Dr. Robert Angus Smith scholarship in sanitary science in memory of his uncle. The late Miss Eliza Marple Holt left £600 for the foundation of a scholarship to promote the training of women in medical knowledge, and also left £2385 to the University. A house behind the Public Health Laboratory in York-place has been purchased for this department, which will in future be known as the Department of Bacteriology and Preventive Medicine. The Department of Pathology will be removed from the Medical School and brought into closer touch with the allied Department of Bacteriology. This will leave more room in the Medical School for the extension of other departments. On the recommendation of the Senate and Council it has been decided to confer the title of Emeritus Professor on Prof. R. B. Wild on his retirement from the Leech Chair of Materia Medica and Therapeutics.

SOME OBSERVATIONS ON

LIGHT TREATMENT AT THE LONDON HOSPITAL.

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THE Light Department of the London Hospital is in two sections: (1) for local treatment; (2) for general or light bath treatment. The department for the local application of concentrated actinic light, originally opened on May 1st, 1900, was extended in 1903, and is situated on the second floor of the out-patient block in a spacious room. The apparatus in this section consists of:—

(*a*) Two large carbon-arc lamps (Finsen type) working at 70 ampères, and arranged to treat four patients simultaneously at each lamp.

(*b*) Four smaller carbon-arc lamps (Finsen-Reyn type) working at 25 amperes, each lamp arranged to treat one patient.

(*c*) Water cooled mercury-vapour lamps (Kromayer type).

The department for general or light bath treatment is on the roof of the out-patient block, and consists of five rooms with bathroom and lavatory accommodation. Lamps are installed in four of the five rooms, and the fifth apartment is for the use of the nurses and contains steriliser and examining couch. These rooms have been erected as a temporary building to meet the urgent need for such a department. The electrical equipment of the rooms is as follows:—

Room 1.—Open arc lamp (Finsen type) giving an intense white light with a short arc ¾ in. long. Current required is 50 ampères, 60 to 70 volts. Direct current is obtained from a motor generator, which also supplies the Finsen lamps in the light treatment department. The lamp is suspended on counter-balance-weight gear.

Room 2.—Two open arc lamps (Westminster) working in series off supply company's mains, 240 volts direct and consuming 25 ampères each. These lamps give a more violet ray than the Finsen lamps, as carbons burn approximately 1½ in. apart. They are suspended on counter-balance-weight gear, and the whole mounted on a rail to give horizontal movement. The arc lamps in Rooms 1 and 2 are fitted with metal tray underneath to receive falling ash from carbons.

Room 3.—Mercury-vapour lamp (Jessionek, supplied by General Radiological Company) fitted on a floor standard complete for attaching to ordinary 240 volts plug in room. Consumption 3½ ampères at 240 volts. Mercury-vapour lamp as above, supplied by Messrs. Westinghouse, Cooper, Hewitt Co.

Room 4.—One long flame Westminster lamp, as in Room 2, but arranged to be much nearer the floor for the treatment of small children.

All treatment rooms and the nurses' room are provided with a system of ozonisers (Quain). Each room has two hanging pendants, carrying five quartz-tube generators about 2 in. diameter and about 8 in. long. A high-tension transformer in each room supplies current for these and is controlled by a variable resistance switch. The alternating current to these transformers is supplied by a small rotary converter of 240 volts direct current. An electric clock (Synchronome Co.) is provided in each room to show uniform time and facilitate the exposure required. All rooms, &c., are heated with hot-water radiators. High-wheeled couches are provided for recumbent cases, and the chairs for patients have been specially made with backs arranged with the least obstruction possible to the rays.

Illuminants in Use.

No consideration whatever is given to any glass-enclosed light. Glass is almost impermeable to ultra-violet light.

1. Carbon Arcs.—Small or large carbon-pencil arcs are equally valuable if the law in inverse squares is

borne in mind—i.e., a small group or single patient placed before a 25 ampère lamp, or ten children or eight adults around a 75 ampère lamp would give equally good results. Such lamps are mechanically dependable owing to their long use by electrical engineers as public illuminants. The only difficulty is the regular approximation of the carbon pencils as they burn away, and this is efficiently met with in any type designed for continuous use. An arc that will burn four hours without replacement of carbons is all that is required. The group treatment of patients round an arc lamp is attended by an extreme degree of heat and stuffiness which can be overcome by efficient ventilation, or when this is impossible, by the installation of an efficient ozonising apparatus. For convenience of electrical supply two 24 ampère lamps can be used together as a unit rather than one lamp of higher ampèrage.

2. *Mercury-vapour lamps* have certain advantages. They are portable and the current required may be obtained from ordinary lighting circuits. No mechanical attention is necessary during the ordinary life of the "burner," which is approximately 1000 hours. It is fragile, replacement is expensive, large-group treatment is impracticable, and the best results are obtained by treating patients singly, or at most in pairs. Great care is needed for the protection of the eyes of both patient and attendant as painful conjunctivitis may follow a very short exposure. Children particularly require constant watching under this light as they are apt to interfere with the apparatus and get too near the source of light. Accurate timing, which is most important, is obtained by setting the hands of a cardboard clock face to the time of the termination of the dose, and by always having a dependable clock facing the patient who is told that when his time arrives he must leave the lamp. This precaution is taken in case the nurse should by any accident be prevented from giving the necessary warning. We prefer this method to the installation of an automatic cut-out worked by a clock, since the frequent interruption and restarting of the lamp at intervals that may be as short as two minutes throws an undue strain on its construction, and time is lost in waiting for the incandescent vapour to acquire its full actinic value at each restarting. The reaction from an absolutely new lamp is more intense than from one which has been in continuous use for 24 hours, but after that certainly up to 600 hours the reaction has appeared to us remarkably constant. When a burner grows old the quartz becomes opaque and longer exposures are tolerated. When replacing an old burner, therefore, it is important to retime the exposures as from the start.

Clinical Dosage.

Generally speaking, the initial dose which can be borne with comfort should cause no more than an evident reddening of the skin and a conscious tingling which is not unpleasant. Three years' experience of initial doses has shown no ill-effects from exposures of half an hour to the carbon-arc light or of two minutes to a 6-in. mercury-vapour burner. With either of these initial doses desquamation in the form of large dry flakes may be widespread, or may not occur at all. We have rarely seen blisters form, however intense the reaction within this timing or however widespread the desquamation may have been. From our observation more severe reactions are given by the skin of brunettes, who also develop far more intense pigmentation as time goes on. We meet with blondes whose reaction, at first acute, after many doses is often imperceptible yet the improvement in their physical state continues. A trial dose on a limited area of skin has been suggested as a method of determining the dosage for new patients. We have not yet found any disadvantage in gradually ascending doses from the initial exposure which we have ascertained to be safe—e.g., half an hour of the carbon arc or two minutes of the mercury vapour.

The carbon-arc exposure is increased by half an hour at a time to a maximum of four hours per diem. If at any time the skin is noted as being erythematous, with or without pigmentation, the dosage is not increased. In th mercury-vapour cases the initial two minutes to each side of the body is increased weekly by a minute to either side, to a maximum of 20 minutes to each side.

Intermissions due to illness, holidays, menstruation, or other reasons, call for watchfulness. An interval of four days or less calls for no alteration in the time of exposure. A month's rest certainly means a resumption of the initial dosage. After a fortnight's holiday the maximum dose previously reached should be halved, or painful severe erythemata may occur. In practice we find it unnecessary to fix a different initial exposure for children and adults. For rickety babies we have not exceeded a maximum exposure of two and a half hours to the carbon arc. The standard distance of the patient's exposed skin from the source of light is assumed in all cases to be 3 feet, and so far we have applied this system of dosage to every type of disease, but further experience may lead to modifications. It is best to keep the patient still throughout the treatment, and no special advantage is gained by allowing him to walk about. Areas of skin reacting from any local treatment, or ulcerated, are carefully protected by a dressing while the rest of the skin is exposed. If this is not done the patient will complain of pain and discomfort, which is not compensated by any appreciable therapeutic benefit. Protection of the eyes is necessary whenever the front of the body is under treatment. Smoked glasses in practice are always discarded for brown paper masks. Small children wear closely fitting leather and elastic eye-shades in which deep-tinted glasses are inset.

Selection of Patients.

(*a*) *Organisation.*—The choice of patients to be treated must naturally be left to the discretion of the medical officer in charge of the clinic. In practice we find it impossible to take on cases, however suitable, unless and until arrangements have been made to ensure the regularity and continuity of their treatment.

(*b*) *Provision for Regular Attendance.*—The majority of patients needing light treatment will be unable to pay for it during the necessarily long period. Financial aid is necessary if the clinic is to work successfully, and continuity of attendance is essential. In all these matters coöperation with the local authority is of the greatest assistance. In some instances all that is necessary is the provision of a railway season ticket, in others a lodging allowance. The provision of hostels in connexion with clinics attached to general hospitals is now being considered. Attendance of patients can be encouraged by health visitors and by school nurses. Early cases are picked out for treatment by school medical officers, others by tuberculosis officers and infant welfare clinics, while the majority have been and always will be sent for treatment by the general practitioner.

(*c*) Cases of *pulmonary and laryngeal tuberculosis* should be treated only in institutions devoted to this special work, partly because they are contagious and partly because they need special dietary and hygienic care and expert clinical supervision. No surgical case should be admitted unless referred by a competent surgical authority. We have had sent to us cases of spinal caries still needing orthopædic support and cases of rickets that required operative or instrumental correction of deformity. Blood diseases also must be watched by a hæmatologist.

(*d*) *Education.*—The daily treatment must continue for a long time and education must not be forgotten. Illiteracy and indiscipline are bound to occur in children lodged for long periods away from home. Thanks to the keenness of the London educational authorities all our non-contagious children of school age may now attend school for half the day. Arrangements, however, have still to be made for the education of children coming from a distance and living in approved lodgings in the neighbourhood of the clinic.

(*e*) *Reports.*—To secure the willing coöperation of boards of guardians it is necessary to make careful clinical reports which we find it advisable to supplement by photographs. It is obviously to the advantage of the contributing authority to be fully informed of the attendance and progress of cases for which they have assumed responsibility.

(*f*) We never allow ourselves to forget that diseases must be attacked from all sides at once. Rickets calls for dietetic as well as light treatment; lupus needs local as well as general therapy; tuberculous adenitis may need tuberculin injections; surgical tuberculosis may require aspiration or operative measures.

Lupus Vulgaris.

The treatment of lupus vulgaris by the local application of concentrated light (Finsen treatment) has been carried on at the London Hospital for 26 years, and during that period 2663 new cases have been dealt with. From time to time reports on the work have been published,[1] [2] and it will be unnecessary here to give more than a brief summary of the experience gained in the clinic. The cases may be divided into four groups:—

(*a*) Cases in which there has been complete cure with no relapse. A large number of these have been examined periodically, and we are in touch with many that have been well from 10 to 25 years.

(*b*) Cases in which the disease disappeared under treatment, but in which small recurrences have appeared from time to time. In such cases renewed treatment cleared away the lesions.

(*c*) Cases in which the disease improved under treatment, but in which we have never been able to remove all the lesions.

(*d*) A small group of hopeless cases which were not influenced materially by any form of treatment.

In addition to these groups there are patients who, for domestic, financial, or other reasons, have been obliged to give up attending for treatment. Since the first experimental period, in which nothing was used except the light treatment, other therapeutic measures have not been neglected. Superficially ulcerated lesions have received occasional short exposures to X rays. Other measures, such as the application of antiseptics and keratolytic remedies for warty areas, have prepared surfaces for the Finsen treatment. Lesions in the mucous cavities have been dealt with where accessible by curette, cautery, or caustics. Moreover, in gravely disfigured subjects or in areas where the scar is of little moment, the light treatment has been supplemented by the application of acid nitrate of mercury, creosote, and salicylic acid, pyrogallic acid, &c.

As a result of these local measures 70 per cent. of the patients have been cured, 11 per cent. require occasional treatment, 16 per cent. are classed as "improved" and will probably require treatment from time to time all their lives, and 3 per cent. only remain uninfluenced by treatment. These figures are slightly better than those given by Reyn, of the Finsen Institute at Copenhagen, but the type of lupus seen at the great Danish clinic is more severe than that seen in London.

The causes of failure or imperfect response to the Finsen treatment are:—

(1) *Extent of the Disease.*—Many of the patients did not come to the clinic until the lupus had involved large areas. Extensive cases have taken years to cure, and in some instances the surface affected was so great when the patient was first seen that such a slow measure as local phototherapy could not be considered. Where the disease affected large areas on the trunk and limbs—that is to say, parts where the character of the cicatrix was of little importance—surgical measures and the application of caustics like creosote and salicylic plasters were found preferable to the light treatment. Even in some facial cases where there was already great disfigurement it was thought advisable to prepare the way for phototherapy by the application of strong caustics. It is encouraging to find that in recent years more cases of lupus of small areas have been sent to the clinic, especially by school medical officers in large centres, but we still see distressingly mutilated cases from many provincial areas. Multiple lesions of small size, occurring after acute specific fevers such as measles, do not as a rule present difficulties.

(2) *Rapid Spread.*—A very troublesome group of cases is that in which the lupus spreads so rapidly that it is impossible to keep pace with it by phototherapy. These patients have a very low resistance to infection. Treated areas may heal readily enough, but while one site is being cured adjacent parts become invaded and the disease continues to spread. The most unfavourable type is that in which there is great thickening of the whole skin. When the face is involved the lips and cheeks become bloated and purplish-red in colour with a form of lymphatic infiltration resembling a pseudo-elephantiasis. Such cases are not common, but I have followed several from their early stages and have found nothing influence them.

(3) *Presence of Lupus of the Mucous Membranes.*—In the first report [1] which dealt with a large accumulation of old cases, the proportion of patients with lupus of the mucous membrane of the nose, buccal cavity, and pharynx was 43 per cent. Christiansen gave the proportion of mucous membrane invasions in the Copenhagen Light Clinic at about the same date as 80 per cent. Mucous membrane lesions were recognised in just under 30 per cent. of new cases seen at the London Hospital. Up to July, 1922, these cases were treated by surgical measures, the application of strong iodine, trichloracetic acid, lactic acid, &c. Some improvement was found to follow Pfannenstiel's method of generating nascent iodine in the nasal cavity. In many instances, however, no cure could be effected as it was impossible to reach the whole of the diseased area.

Influence of Light Bath Treatment in Lupus Vulgaris.

The light bath treatment was introduced at the London Hospital in July, 1922, as an experimental measure on the lines suggested by Reyn. At first a 25 ampère carbon arc was used and later a large 70 ampère arc with tungsten paste and carbon poles was employed. Newer types of carbon-arc and various forms of mercury-vapour lamp were tested and several have been installed.

The first series of patients healed were of the resistant type, and light baths were used *without any local treatment.* The results were so encouraging that, as our resources increased, we combined both local and general treatment in a large number of cases, and found that the efficacy of local treatment was increased by the application of light to the general body surface. We found (1) that the rapidly extending cases (Type 2) with whose progress we could not keep pace by local measures, could be healed, and (2) that, as Strandberg was the first to point out,[3] many cases of lupus of the mucous membranes will heal without local treatment. We found, therefore, that we had overcome the two chief difficulties which had previously hampered our work, and thus were able to increase our proportion of cures by 20 per cent. We agree with Reyn that a combination of local and general light therapy carried out with proper care in the details of the technique will raise the cures in lupus vulgaris to 90 per cent.

There will always be patients who relapse a few months after the treatment has been suspended and they have returned to their normal environment. Nothing at present known will permanently raise their resisting power to the *Bacillus tuberculosis.* It seems a good practice to give them a prophylactic course of light baths every year. There is also a small percentage of cases that we cannot influence, particularly what may be called the "facial lymphatic" type. Light baths have little or no effect.

[1] Seven Years' Experience of the Finsen Treatment (J. H. S.), THE LANCET, 1908, i., 713.

[2] Finsen Light Treatment at the London Hospital, 1900–1913 (J. H. S.), THE LANCET, 1913, i., 1655.

[3] Zeitschrift f. Laryngologie, 1920, Band x.

Results and Conclusions.

Two hundred and forty-nine cases of lupus vulgaris have been treated by light baths in addition to local treatment; 16 of them have given up attending for various reasons, financial or domestic. In one case treatment was abandoned because the patient, who was supposed to have healed fibroid phthisis, had a severe hæmoptysis. One patient, an adult male, developed encephalitis lethargica. Four patients died. One committed suicide after she had left the hospital as cured; three died from meningitis.

One was a young girl in whom nasal lupus had been apparently cured, and who was suspended from light treatment; another, a woman of middle age, who had extensive areas of dry lupus, was admitted to a Poor-law hospital, and at the autopsy calcareous nodules of stony hardness were found at the apices of both lungs and extensive recent tuberculous meningitis. The third was a woman, also with extensive lupus of the dry variety of many years' standing. In her case there was no autopsy.

Possibly in all three the meningitis may have been tuberculous, but in one instance only we have post-mortem information. All these patients had had long periods of light bath therapy.

Reviewing the cases as a whole, the following statements (most of which are generally accepted) appear justified:—

1. The results are independent of (*a*) the cutaneous reaction, (*b*) the extent and degree of pigmentation.
2. Children as a rule improve more rapidly than adults.
3. Increase in the body-weight is small. A rapid decline in weight should lead to immediate suspension of light bath treatment and a search for active pulmonary invasion.
4. Estimates of temperature and pulse-rates are of no particular value, but we prefer not to treat pyrexial cases.
5. The very slight leucocytosis observed in early cases has, likewise, no clinical importance.
6. There is no doubt of the marked improvement in the general health of the patients and in their mental outlook. This is independent of any change in the basal metabolism, as shown by the London Hospital Clinic.
7. In 26 years' experience I have never seen carcinoma develop in any case of lupus which responded to light therapy. Many of the patients had been under continuous treatment by concentration light for years.

In confirmation of these general statements I append details of cases.

Phthisis Developed and Revealed by Light.

The following three cases show the development of: (1) hæmoptysis; (2) hilum phthisis; (3) night sweats while under light bath treatment.

CASE 1. *Hæmoptysis.*—T. W., aged 50. Elbow trouble followed injury two years ago. T.B. found in aspirated fluid. Operation and vaccine in hospital, 1923. Weak right arm and forearm; sinus, crusts, and scars about ankylosed right elbow. Several X ray plates not diagnostic. T.B. glands right side of neck 20 years ago. Treated at London Hospital Feb. 3rd, 1925, light baths started; arc light 30 minutes daily. 11th: Severe erythema of chest. 18th: Cough, did not feel well; arc light reduced to a quarter of an hour. March 18th: Hæmoptysis at home; no further light.

CASE 2. *Hilum Phthisis with Pyrexia.*—L. H., aged 8. Was admitted a patient Sept. 18th, 1923, with numerous crusted multiple tuberculides scattered on the forearm and face. Microscopically, these lesions were granulomata with multinucleate giant cells. The child had a barrel-shaped chest, and Dr. Charles Miller, who examined her, considered there was presumptive clinical evidence of enlarged hilum glands. Radiograph showed that the glands around the hila were excessive for a child of 8. Wassermann reaction negative; there were no blood abnormalities. Patient was submitted to mercury-vapour light baths after her temperature, on observation in the ward, had been normal for a fortnight. The light doses were gradually increased to a quarter of an hour all told—i.e., a quarter of an hour of M.V. to each side daily. Her condition became torpid, almost typhoidal, and the light baths were suspended on Dec. 12th as being definitely harmful. She then immediately brightened, but a few new experimental exposures threatened again to make her ill and she was removed by her friends. We heard later that she developed pseudo-elephantiasis of one leg with tuberculous ulcers.

CASE 3.—F. C., aged 31, has had lupus of chin and upper chest since 1921. July 14th, 1925, light baths commenced. Sept. 23rd: Felt very tired, diminished appetite, night sweats, loss of voice and weight. Transferred to general physician. Wassermann reaction negative. Numerous T.B. in sputum. Light bath treatment suspended.

By the regulations laid down by the hospital authorities all the lupus patients who attend the London Hospital light clinic are out-patients. The majority of them live in their own homes or with friends, and their housing, feeding, and general hygiene are, therefore, those of their class. In certain cases where it appears that the food is insufficient, the sister in charge has power to draw upon a small private fund by which children who need them have an allowance of milk and other necessities. Some patients who live at a distance have their fares paid by the local tuberculosis authorities, season tickets being provided in suitable cases. A number of children who come from a distance are housed with respectable women in the neighbourhood, the expense being borne in a few instances by the relatives, but in most by the local authorities. By arrangements with the guardians of neighbouring districts some of the children from provincial areas are lodged in local Poor-law hospitals and attend daily.

It is obvious that the conditions under which these patients live are not ideal and are not to be compared with those of patients who are housed in institutions like Alton and Carshalton. In fact, we are dealing with our cases in what may be considered their normal environment. No one who has any experience of what this environment means can consider the conditions satisfactory, but it would be impossible to alter them except at prohibitive cost. The question of building for our patients one or more hostels where conditions of life could be properly supervised has been raised on several occasions, but the financial position of the hospital does not allow it. The ready coöperation of the London County Council is shown by their spontaneous establishment of a lupus school for boys and girls attending the London Hospital, and this has proved of great assistance.

We have always held that this form of treatment should be carried out in country centres, in clean air and wholesome surroundings, with good food and provision for the education of children. This, however, would entail a large capital outlay and heavy maintenance charges. In spite of all the drawbacks incidental to our out-patient clinic we obtain results which are far better than those obtained before phototherapy was introduced, and in this respect I (J. H. S.) can speak with some certainty, as I had considerable experience of the older measures as applied by surgeons of repute.

THE RESULTS OF

ULTRA-VIOLET LIGHT TREATMENT.

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THE record of a complete year's work at the Artificial Sunlight Clinic at the Carnegie Institute is now available, and the results can be considered in some detail. The patients are chiefly children under 5 years of age, but a few mothers also receive treatment. Although so much has been written and said with regard to u'tra-violet light therapy, the recorded results of special clinics are still few in number, and are complicated by the combination of this treatment with other forms of therapy. The clinic at the Carnegie Institute has been run on the simplest lines and, beyond advice on diet and hygiene, nothing has been done to change the ordinary factors of the child's life. No extra food has been given and cod-liver oil has not been prescribed, though it has not been stopped in the few cases where it was already being administered.

The two lamps are K.B.B. mercury-vapour lamp, the large 440-volt lamp, and the small 220-volt lamp. Most of the work has been done with the large one, which has been used for 439 hours, against 107 hours for the small lamp. The former costs 1·1*d.* per hour and the latter 0·6*d.* per hour for

electricity, but shorter treatments are required with the large lamp. The strength of the lamps in ultra-violet radiations has been estimated regularly, and skin tests have been done in every case. On these factors the dosage has been estimated, and has varied from 3 to 15 minutes per application, given twice weekly.

Rickets.

The value of ultra-violet light therapy in rickets is now generally realised; its speed and simplicity make it invaluable. The difficulty is to secure regular attendance at an out-patient clinic. To illustrate this, it may be mentioned that out of 12 patients in whom rickets was shown by X ray photographs, and whose parents promised regular attendance, not a single one attended. The procedure in rickets is as follows. An X ray photograph of the wrist is taken, and later the child is seen by me at a special clinic where a complete physical examination is made. If the case is suitable and if the mother promises regular attendance, the child is ordered light treatment, the exact dose being prescribed. After about 12 treatments another X ray photograph is taken, and I again see the child, and prescribe further treatment as required. Twelve treatments constitute a course, but in practice 8 to 14 may be given before the second radiograph is taken, the number depending mainly on possible attendances.

For purposes of discussion cases may be placed in three groups:—

(*a*) Completed cases. Rickets shown by X ray, with satisfactory recovery	42
(*b*) Incomplete cases. Rickets shown by X ray, with failure to attend till discharge	77
(*c*) Clinical rickets. Rickets not shown by X ray or no X ray taken	17
Total	136

It may be considered that (*c*) should not be included, but these cases showed definite clinical symptoms—bending, enlarged epiphyses, lack of muscle tone, &c.—and there can be little reasonable doubt that they were cases of rickets. Those who now refuse to accept a case as rickets without an X ray diagnosis are, in my opinion, neglecting some obvious facts. There is definitely a stage in healing rickets where the bone becomes "normal" in X ray photographs, although the child is still suffering from the disease, and may not walk for some weeks longer, and may continue to show other symptoms, such as anæmia, which definitely justify the contention that there has not been a return to normal. Children benefit by treatment at this stage, and should be treated if first seen then. Probably every case of rickets will give an X ray picture at some period of its history, though there is no definite proof for or against this. It is conceivable that the changes usually seen in radiographs are gross ones which are not necessarily present in every case of a generalised metabolic disturbance, the incidence of which may fall with varying degrees of severity on different tissues.

The attendances of the completed cases, Group A, were as follows:—

Cases.	Attendances.	Cases.	Attendances.
16	10–20	4	40–50
15	20–30	2	50–60
5	30–40		

Many cases attended after the radiograph showed normal bones, as the muscle tone and general health remained defective.

The order in which improvement appears normally to occur is as follows:—

(*a*) Improvement in disposition. The child is more cheerful and contented, and sleeps and eats better. This change is often very marked, and induces the mothers to continue attending.

(*b*) Improvement in the radiograph picture, and eruption of teeth where there is delayed dentition.

(*c*) Improvement in muscle tone.

(*d*) Improvement in anæmia when present. This is always delayed. The hæmoglobin percentage remains low for some time, and rises slowly. The number of erythrocytes increases earlier than the rise in hæmoglobin percentage.

Deformities naturally tend to improve very slowly. Flat-foot is often troublesome. Many of the children were sent to the remedial exercise clinic when the mothers could be induced to attend.

Analysing all the cases, it was found that 62 had made a series of continuous attendances till the bones became normal.

Cases.	Attendances.	Courses.
32	8–14	1
27	14–28	2
3	48–49	4

It will be seen that in the large majority one to two courses of treatment suffice to produce a normal radiograph; only the very severe cases require prolonged treatment.

The total attendances for all cases were as follows:—

Group.	Cases.	Attendances.	Average attendance.
A	42	1021	24
B	77	1088	14
C	17	197	12

Ætiology.

An endeavour was made to ascertain as far as possible the cause of the condition. The mother was carefully questioned and it became fairly easy to decide the predominating factor, which was generally "bad hygiene," as is seen in the table below. This means insufficient fresh air and light, not necessarily bad housing, although this was present in the majority of instances. The important point was that the child was never out of doors much, either because the yard was considered unsuitable or there was no yard, or the mother was careless or unhealthy, or the child was too zealously guarded from the weather owing to some ill-health. "Defective diet" means a diet worse than the average and especially deficient in milk. These cases come from extremely poor families, and the children are fed mainly on bread and margarine. Ill-health certainly plays a part in the causation, often in relation to confinement to the house, but also apparently apart from this, though it is difficult to distinguish cause and effect in every case.

Bad hygiene	35	Ill-health and bad hygiene and diet	13
Bad hygiene and diet ..	38	Doubtful	9
Very defective diet ..	17		
Ill-health	10		
Ill-health and bad hygiene	12		
Ill-health and bad diet ..	2		136

Prophylaxis.

From July an attempt was made to induce mothers with young, healthy infants, living under particularly bad housing conditions, to bring the child for a weekly treatment in order to prevent the development of rickets. The children, who were all under 6 months of age, were seen by me and their physical condition noted: none had "clinical" rickets. There was no bending, enlargement of the epiphyses, loss of muscle tone, &c. Pallor was noted in three or four cases only. Forty-six infants were brought up, chiefly during the autumn months. After the medical examination an X ray photograph was taken, and in five cases the presence of active rickets was reported—i.e., in 10 per cent. of apparently healthy infants under 6 months, living in bad hygienic conditions, and showing no symptom of ill-health beyond pallor. The numbers are small, but they are certainly suggestive. Unfortunately it was impossible to obtain regular attendance; 29 attended less than five times, and only two completed the winter.

The small numbers make it impossible to say whether a weekly treatment with ultra-violet light would be sufficient to prevent rickets under bad hygienic conditions, but my personal impression is that it would, on a fairly satisfactory diet, without cod-liver oil.

Other Conditions.

A complete table of these cases is here given. Classification is difficult, but has been done as carefully as possible. Regular attendance is frequently unobtainable, and this reduces the available number when considering effects. Among the most encourag-

ing results were those obtained in "debility following the infectious diseases" and in "catarrhal children." The "chronic bronchitis" cases vary; on the whole the treatment is worth trying. The "infantile eczemas" did well, especially the type affecting the flexures as sites of election. The patches were exposed for three to six minutes at 18 in., where the best results were obtained. The relief from pruritus and the rapid drying of "weeping patches" gives great relief to the child, but even after clearing up the condition tends to recur, and often remains stationary in the dry stage for some time. No local treatment, except boro-calamine lotion, was used at the same time. These impressions are gained not only from the tabulated cases, but from those more recently treated. There were only two cases of tuberculous peritonitis, but both these did very well. The general debility group is a very large one. The majority were children from bad homes, badly cared for, and their attendance was poor. They form an unsatisfactory section, and have been placed under the subgroup "mismanagement." The others in this group did much as one would expect. The "catarrhal" cases, including enlarged gland cases, improved markedly. The "nervous child" type did not benefit at all. An interesting subgroup were the 15 children with "very poor muscle tone." They had no definite symptoms of rickets apart from this and the radiograph showed "normal bones," but their rapid and invariable improvement with ultra-violet light suggests a relationship to rickets. Some of the worst cases were unable to sit up or stand.

Another series of some importance was the "lactation" group. Nine mothers attending the breast-feeding clinic, who had deficient milk, were given ultra-violet light treatment, although the baby was sucking well. These women had failed to improve with ordinary advice as to diet and management. The milk did not improve, although the majority stated that they felt better in health.

Conclusion.

Of the value of ultra-violet light treatment for rickets there can be no question; improvement can be obtained rapidly and surely in all cases. Most cases with a strong catarrhal tendency, or debility following infectious diseases, including pneumonia, show marked improvement. It is useful in infantile eczemas and in alopecia. The results among children treated in the observation ward of the institute and given light treatment are similar. Wasted infants suffering from chronic dyspepsia from various causes do not, however, benefit to any marked extent. Even in these, however, the use of light treatment is valuable in order to prevent the onset of rickets.

Total Cases other than Rickets.

Children.

Condition.	Number.	Marked improvement.
General debility	86	
(1) Mismanagement	37	5
(2) Tonsils and adenoids	9	5
(3) Chronic diarrhœa and dyspepsia	7	6
(4) Children not out of doors but well cared for	2	2
(5) Enlarged cervical glands	7	7
(6) Bronchitis and catarrh	5	3
(7) Nervous children	4	—
(8) Poor muscle tone	15	10
Debility following infectious diseases	15	
Whooping-cough	9	6
Pneumonia	4	1
Measles	2	1
Chronic bronchitis	10	3
Catarrhal children (without marked debility)	7	4
Eczemas	6	3
Tuberculous peritonitis	2	2
Other cases	7	4
Mothers.		
Lactation cases	9	—
Other cases	5	2

INDUCTION OF PREMATURE LABOUR

AND ITS JUSTIFICATION.

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THE arguments brought forward against the operation of induction are: (1) the increased risk of sepsis by the introduction of a foreign body into the uterus; (2) that the preliminary interference and period of waiting for labour to begin induces a state of mind in the expectant mother unfavourable to physiological parturition; (3) the risk of a premature infant being born, with a poor expectation of survival; and (4) that the pelvic calibre is not fully exploited.

The first and third points will be examined in this paper. The second is difficult to estimate, and all that can be said in regard to it is that the impression among the medical and midwife staff in charge of our patients is that the mental effect is not appreciably noticeable. The fourth point holds good in a certain proportion of cases, but should become less important with more careful examination and increasing experience in the selection of cases and of the time of induction.

Of the cases subjected to induction of premature labour in the maternity ward at St. Thomas's Hospital in the six years 1920–25, those in which the operation was performed for albuminuria and the toxæmias of pregnancy are put in a group by themselves because their lowered resistance introduces a factor increasing the morbidity-rate and invalidating comparison with the general morbidity-rate. In the first group the indication for terminating the pregnancy was chiefly that of disproportion between the fœtal head and pelvis, but the group contains also a few cases of maternal cardiac disease. In the second group the indication was renal inadequacy or toxæmic symptoms either of serious degree or not yielding to treatment. Induction for placenta prævia falls into another category altogether and is not comparable to the ordinary induction adopted to avoid a difficult and protracted labour. It has, therefore, been excluded from the series.

The Strasbourg standard of morbidity is the one adopted in the ward—i.e., a temperature of 100·4° F. (38° C.) or over for 24 hours. Some of the cases have been subjected to other internal manipulations, such as forceps delivery, internal version, bimanual rotation or introduction of de Ribes's bag, which increase the risk of morbidity, and such measures have been noted whenever possible.

The total number of inductions in the two groups amounts to 146 cases in the six years under review, 102 falling into the first group and 44 into the second. These numbers occurred in a total of 3600 patients admitted to the ward, or a percentage of 4·08 of the whole and 2·8 for the first group alone.

In Table A, among the 102 non-albuminuric cases, there was one death from puerperal insanity, the patient, on the night after her delivery, jumping over the ward balcony; there was no previous rise of temperature or other evidence of complications. Of the three pyrexial cases one had an unexplained pyrexia of 104° F. for 36 hours two days before labour commenced and three days after the bougies were introduced, one had a short pyrexia of two days occurring three days after delivery for no apparent reason, and the third had broncho-pneumonia after four anæsthetics for operative procedures. The morbidity-rate for this group is 3·92 per cent. One patient had hallucinations for three days and then recovered completely; there was no accompanying pyrexia.

There was also a case of subacute mastitis associated with an acute coryza and a temperature of 102° F., 100° for 48 hours arising on the twelfth day of the puerperium.

In Group II., covering those cases of disorders associated with pregnancy that might lower maternal resistance, all save one fell into the category of

albuminuria or toxæmia of pregnancy. The exception was a case of advanced carcinoma of the rectum with secondary peritoneal metastases. Among these there were two deaths, one from uræmia and the other from septicæmia, and three pyrexial cases that recovered; two had pyelitis and the other septicæmia, the latter

TABLE A.

GROUP I.			GROUP II.		
Year.	No.	Morbidity.	Year.	No.	Morbidity.
1920 ..	16	1 (*a*)	1920 ..	6	0
1921 ..	10	0	1921 ..	1	0
1922 ..	12	0	1922 ..	4	1 (*e*)
1923 ..	9	2 (*b*)	1923 ..	14	2 (*f*)
1924 ..	26	0 (*c*)	1924 ..	9	1 (*g*)
1925 ..	29	1 (*d*)	1925 ..	10	1 (*h*)
Total 6 yrs.	102	4	Total 6 yrs.	44	5
Morbidity-rate ..		3·92	Morbidity-rate ..		11·3

(*a*) Subacute mastitis, 36 hrs., T. 102° F. (*b*) (1) Broncho-pneumonia; (2) insanity. (*c*) Hallucinations; no pyrexia. (*d*) Pyrexia from ? mild sepsis. (*e*) Pyelitis. (*f*) (1) Uræmia, D.; (2) septicæmia; T. 102° F.; D. (*g*) Septic parotitis. (*h*) Pyelitis.

TABLE B.—*Cases Admitted to Ward in 1924.*

No.	Pyrexia.	Deaths.	Morbidity.
585	34	6	6·8 %

being transferred to a fever hospital with mumps. The morbidity-rate in this group is 11·3 per cent. In the two groups together the rate is 7·1 per cent.

The general morbidity-rate for the ward in the year 1924 worked out at 6·8 per cent., so that these figures indicate that the fear of increased risk of sepsis from induction is unfounded, though the number of cases is admittedly too small for dogmatic statement. Of the cases in which labour was induced for disproportion the morbidity was considerably less than the average of all cases in the ward.

Effects on the Child.

In the 102 cases in the first group there were 12 stillbirths, 4 premature, and 8 apparently mature. Of these two were macerated fœtuses. Prolapse of the cord was present in two cases and was treated by the de Ribes's bag in one and internal version in the other; another case was a brow presentation and craniotomy was performed. There was no clear reason why the infants should have died during delivery in the other cases, and we have no explanation to offer for the high stillbirth-rate in this group—more than three times the average. On the other hand, all the premature infants were discharged from the ward in a normal condition, taking the breast well; most of them were of 37 weeks' intra-uterine development or more; a few were 36 weeks; one was 33 weeks and did very well, showing that apart from the increased risk of stillbirth the rearing of the slightly premature child presented no particular difficulty.

Of the 90 infants born alive in Group I. 73 have been "followed up" since leaving the ward, and the mothers of 17 have not replied to letters of inquiry sent to their homes by post. Out of 73 premature infants who left the ward in good health and whose history is known five died in the first year of life: (1) from erysipelas, aged 3 weeks; (2) from renal thrombosis, aged 4 weeks; (3) from marasmus, aged 4 weeks; (4) died at 4 months, cause unknown; and (5) one of twins died at the fifth week, cause unknown. Sixty-eight are now doing well and no difficulty occurred with breast-feeding, except with one at 36 weeks' maturity, which, after being fed by the spoon with expressed milk for one month, eventually took the breast well.

Whether the operation was justified or not can be determined in each case by taking into account the effect of the parturition on mother and child. An attempt has been made to obtain an index of this kind by taking the length of the second stage of labour together with the degree of moulding and extent of the caput succedaneum on the fœtal head. These criteria must be modified by taking into consideration the strength of the pains and the size of the head. Naturally, if the child was stillborn, with intracranial hæmorrhage and gross signs of pressure, the choice of operation or the time at which it was performed was wrong.

Unfortunately the records in our series are not as full as we should have liked, but the following figures show that on an average the labours were not abnormal and that there was an undoubted tendency to induce labour too early or unnecessarily. Of the 102 cases in Group I. 30 labours were over two hours in the second stage and 10 of them over three hours. The forceps was applied, usually for weak pains with the head on the perineum, in 13 cases, and there was one perforation for a brow presentation. In only five cases was excessive moulding of the fœtal head noted.

The method of induction is that of inserting two or three Krause's No. 12 bougies between the membranes and uterine wall, due aseptic precautions having been taken, and the cervix being drawn down to the vulva by ovum forceps and thoroughly cleaned with a 2 per cent. spirit solution of iodine.

The following cases are quoted as examples, the patients having been in the maternity ward for two or more confinements.

CASE 1.—First child (home), 1920. Term. Difficult labour with forceps, R.P. bleeding and stitches. Baby said to be 11½ lb.; did well. Second child (St. Thomas's), 1921. Labour induced at 36th week for disproportion. Baby weighed 5 lb. Second stage one hour. No excessive moulding. Puerperium normal. Feeding somewhat difficult for first month; after that easy. Third child (St. Thomas's), 1924. Induction 38th week. Baby 7 lb. 8 oz. Labour easy. No morbidity. Manual removal of placenta. Fourth child (St. Thomas's), 1926. Examined several times before term and breech presentation moved to vertex. After examination under anæsthesia, it was decided to let patient go to term. Labour commenced roughly three weeks before expected time. R.O.A. Second stage over two hours. Forceps. Baby born asphyxiated. Large caput; much moulding; died in two hours. P.M., small para-cerebellar hæmorrhages. Weight 7 lb. 8 oz. No sign of external injury. Delay due to imperfect flexion and œdematous anterior lip of os.

CASE 2.—First child (St. Thomas's), 1914. Term. Forceps. Child lived; had congenital dislocation of right hip. Second child (St. Thomas's), 1921. Induction for disproportion. Patient had right scoliosis of the spine and the diagonal conjugate was 4 inches. Easy labour. Child 6 lb. 8 oz. and mature. Third child (St. Thomas's), 1923. Induction at 33rd week for disproportion. Scopolamine narcosis. Baby was a "morphine child," but did very well and weighed 5 lb. 13 oz., and the diameters of the head were about ½ inch below the average.

Case 2 would seem to indicate that there are other factors besides the size of the fœtal head that influence the estimation of disproportion, as the 1923 child was smaller and weighed 9 oz. less than the 1921 child. The decision in our cases has always rested on the fit of the head into the brim of the pelvis as estimated by Munro Kerr's modification of Muller's method, and this may be influenced by the position and flexion of the head to a marked extent.

The majority of multiparæ who had premature labours induced had previously been through one or more difficult labours with forceps deliveries, frequently resulting in stillbirth. The primiparæ are those in whom at the 36th week the fœtal head had not yet sunk into the pelvis. These cases are then submitted to examination under anæsthesia and the head is pushed into the pelvis with one hand while the internal fingers indicate the direction in which the force is applied and estimate the descent of the head. If the head cannot be pushed halfway down the back of the pubic symphysis induction is performed. In those cases in which the disproportion seemed marked an easy labour often occurred with no excessive moulding; the tendency is therefore to induce labour t o early. The explanation is that, whereas in labour we have a strong steady push lasting over several hours and helped by moulding, these factors are not present in examination. Thus considerable experience is required to make an accurate decision.

CASE 3.—First child (St. Thomas's), 1920. Induction at term for disproportion. Diagonal conjugate 4 inches. Second stage two hours. Child 7 lb. No morbidity.

Second child (St. Thomas's), 1921. Induction at 38th week for disproportion. Second stage under two hours. Child 5 lb.

CASE 4.—First child, 1920. Induction in City of London Hospital. Reason not given. Child living. Second child (St. Thomas's), 1924. Induction 39th week. Child weighed 8 lb. 3 oz. Easy labour. Third child (St. Thomas's), 1926. Diagonal conjugate 4¼ inches. Spontaneous delivery after second stage of four hours at 39th week; child weighing 6 lb. 8 oz. Measurements of head ¼ inch subnormal. Difficulty due to œdematous lip of cervix.

With the advance of midwifery during the last 25 years the rôle of the physician has undergone a great change. Formerly the medical attendant was required to show his skill and often his muscle power in delivering the child, the relatives and monthly nurse taking complete charge of the pregnancy, puerperium, and rearing. At the present time his duties involve a careful supervision of the pregnancy, in order to make the labour proceed with as little interference on his part as possible; also the direction of the puerperium and the bringing-up of the child.

The "Trial Trip."

There are two different schools of thought about primiparæ with some disproportion of size between the fœtal head and pelvic brim. One is that the first labour should be used as a "trial trip" in order to find out whether the pelvis will accommodate and transmit a fœtus of average size at full term. If it fails and high forceps or the perforator have to be used, the next pregnancy is watched with greater care and induction of premature labour carried out at the right period of gestation.

The other aims at producing a live infant at the first confinement by inducing when the head seems to be almost too large to pass through the pelvis. The patient is examined weekly in the manner above described and when the fœtal head can only with difficulty be fixed in the pelvic brim labour is induced. Notes of the labours are taken, so that when the woman presents with a second pregnancy it is known fairly accurately whether her pelvis will transmit a full-time fœtus of average size.

There seems to be nothing to commend the first method, either medically or from the woman's point of view, and the second seems the more rational one. It is in successful use in the maternity ward at St. Thomas's Hospital. Each case of induction is recorded in the following manner.

CASE 1.—Primipara, aged 19. Expected date of delivery Oct. 14th, 1926. Extract from antenatal card: "Presentation R.O.A. Measurements: Intercristal, 10¼ inches; interspinous, 9¼ inches. Breasts normal. Urine: No albumin or sugar." Sept. 14th: Fœtal head high above pelvic brim. Diagonal conjugate, 4 inches. 15th: Anæsthetic; diagonal conjugate confirmed 4 inches; head not made to enter pelvic brim by Munro Kerr's method; induction; bougie and quinine. 20th: Labour, first stage, six hours; second stage, four hours. Child: Large caput succedaneum, much moulding; weighed 5 lb. 13 oz.; head passed through brim by anterior asynclitism. Puerperium, no morbidity. Involution normal. Conclusion: Induction justified.

CASE 2.—Primipara, aged 24. Expected date of delivery Oct. 5th, 1926; antenatal observations: Presentation R.O.A. Measurements: Intercristal, 10½ inches; interspinous, 8½ inches. Sept. 21st: Head high; can be made to enter brim with difficulty. 28th: Same remark. 29th: Anæsthetic. Diagonal conjugate, 4½ inches; true conjugate, 4 inches. Munro Kerr: Head can be pushed nearly halfway down the back of the symphysis pubes. Induction; bougies. Labour commenced in 12 hours and lasted 12 hours. Baby, mature; 19½ inches long. Measurement of head normal. No excessive moulding; no large caput. Puerperium and involution normal. Conclusion: With an average-sized fœtus induction not required.

As the bones of the skull in a premature fœtus do not protect the brain from pressure during the second stage of labour as well as those of a full-time child it is better when in doubt to induce labour early and endeavour to shorten this stage and lessen the chances of intracranial injury. If the weight of the child is in the neighbourhood of 6 lb. at birth there is usually little difficulty in rearing it.

I am very grateful to Dr. J. S. Fairbairn (St. Thomas's Hospital) for his kindness and help with this article.

THE "TONSIL" QUESTION.

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THE purpose of this contribution is to inquire whether the wholesale removal of tonsils is justifiable.

Under the general term "tonsils" are included the pharyngeal tonsil, usually spoken of as "adenoids," the faucial tonsils, and the lingual tonsil, and the scope of the inquiry is limited to the chronic conditions of those organs described as hypertrophic, septic, infective, &c. There is a common tendency to condemn tonsils simply because they are enlarged, and no less common is the inclination to saddle them with the blame of an obscure toxæmia for which neither the teeth nor the intestines can be held responsible. One is often asked, by anxious yet optimistic parents, "Is it the tonsils?" when they are dissatisfied with the intelligence, the physique, the speech, or even the habits of their progeny. The tonsils are constantly removed on such grounds, the surgeon being warmed by the comforting thought that if the operation does not prove beneficial, it will, at any rate, do no harm. Do we exercise the same care and discrimination before advising the removal of tonsils which we observe when recommending, for example, a radical mastoid operation? Do we go into all the possible reasons why the tonsils are enlarged, or ask ourselves if the cheesy contents of an open crypt are indeed harmful?

A consideration of the position, structure, and function of normal tonsillar tissue will provide food for thought. Briefly, the tonsils are aggregations of lymphoid tissue, covered by the epithelium of the part, penetrated by surface-opening crypts, and situated at the portals of the alimentary and respiratory tracts. They differ from lymphatic glands not only in their superficial position and in the absence of afferent lymph-vessels, but also in the fact that they contribute mucus and a reducing substance to the saliva. The building up of the tonsils coincides significantly with the period of most rapid body growth. The epoch in development in which infections are most dangerous, and before full resistance to their invasion has been attained, is the time when the tonsils reach the acme of their evolution. This accession of lymphoid tissue is very important for two reasons. First, because it reinforces the protective mechanism by increasing the leucocytes; secondly, because it stimulates local growth, for, according to Carrel, the rate of proliferation of epithelium and connective tissue cells is increased by the presence of neighbouring colonies of lymphocytes.

Tonsillar Hypertrophy in Malnutrition.

Tonsillar hypertrophy may therefore, in the early years of life, be entirely protective; it may also be an indication that body growth is not being well catered for, and that it is serving in a compensatory capacity. It is a matter of every-day observation that badly fed children, and those nurtured in unfavourable conditions, more frequently exhibit enlarged tonsils than do those brought up in a better environment. This applies both to rich and poor. Clark found that a high fat and carbohydrate diet increased the size of the lymphoid areas both in the throat and in the intestine. Stucky was impressed with the relation between the hypertrophied tonsils in the children of Kentucky mountaineers and their de-vitaminised diet, and he observed how these children showed no appreciable benefit after operation if they were kept on the same food, but gave a marvellous response to a diet of milk, eggs, butter, and wholemeal. This association of improper diet and hypertrophied tonsils has been noted and inquired into by many other observers, and I have no doubt of its importance. Many children are given too much sugar and highly milled grain; in houses where there was no possible justification for such economy I have seen, again and again, children given for their

mid-day meal potatoes and gravy, followed by milled rice. Wholemeal, whether it be wheat, oats, or rye, green vegetables, raw fruit, fat-soluble A foods (milk, butter, eggs, &c.), and an allowance of meat as a diet would, I am convinced, lead to an enormous shrinkage in the number of hypertrophied tonsils and adenoids.

Whether non-pathological hypertrophy be of protective or developmental significance in a particular case, the error of removing it is evident. Bauner and Orpel state that, of healthy children who were subjected to tonsillectomy, 57 per cent. were in "poorer condition" after the operation. Kaiser, of the Mayo Clinic, found that 22 per cent. of 5000 children who had had no previous glandular mischief had definitely enlarged glands one year after operation, though he does not state whether this was compensatory or due to an infective agent. Sluder and Zahorsky are both of opinion that tonsillectomy in early life induces a predisposition to infections, while J. E. Davis affirms that he has most convincing evidence of the development of atrophy or hypertrophy of the nasopharyngeal mucosa, of atrophic rhinitis, and of otosclerotic degenerations when tonsillar tissue was removed too early. Such changes, indeed, would naturally follow a deprivation like this if Carrel's conclusions are correct.

The Ill-effects of Pathological Tonsils.

A tonsil may be harmful, locally or systemically, on account of its size, or because of its focal infectivity. Among the mechanical effects of hypertrophy are nasal obstruction and all that it entails, facial deformity, otitis media, dyspnœa, maldevelopment of the chest, and defective oxygenation of the blood. The list of results which have been ascribed to an infective focus in tonsillar tissue is colossal in length and catholic in selection. The local disorders for which such infectivity is responsible include recurrent tonsillitis, "relaxed throat" (which I understand to be an œdema of the faucial pillars, uvula, and pharynx), peritonsillitis, purulent and simple rhinitis, sinusitis, retropharyngeal abscess, and inflammatory conditions of the Eustachian tube, middle ear, pharynx, and larynx.

The general effects, which may be looked upon as those of chronic sapræmia or septicæmia, appear to be most commonly directed at the muscles, joints, heart, blood, and alimentary system, though chorea, nephritis, and inflammatory affections of the nose and eyes are almost as frequent. The ductless glands are involved less often, though the part which infected tonsils can play in the causation of toxic goitre is well appreciated. Barnhill states, for example, that 90 per cent. of his goitre cases had diseased tonsils; Crile, Halsted, and Mayo remove the tonsils, if diseased, after operating on the thyroid, while Joseph Beck removes them before the thyroidectomy.

In this connexion it must have occurred to many that the "adenoid facies" was not entirely due to nasal obstruction; the open mouth, short upper lip, and badly developed nose and palate *may* all be consequences, but the vacant look, the weak hair, the suggestion of an insecure union between the head and the spine, and the under-development of the skeleton and the lack of intelligence and power of concentration suggest defective pituitary and thyroid action. This *may* be in relation to infected tonsillar tissue. Citelli has stated that there is an anastomosis between the small veins and capillaries of the nasopharynx and those of the hypophyseal region, and concludes that the pituitary may be infected through this medium. Even without this direct connexion the pituitary may be infected in the same way as the thyroid—viz., through the blood stream—and it is interesting to note that both the pharyngeal tonsil and the pituitary are functioning most actively in early childhood. On the other hand, the deficiency may be quite independent of such relationship.

To determine whether or not the condition of the tonsils is responsible for systemic disease is not such a simple matter as would at first appear. It is as well, in any case giving rise to uncertainty, to ascertain whether the disorder is in fact of the "infective" type or not. A cell count should elucidate this; if there is a chronic infection, the blood examination will show either a lymphocytosis or a leucopenia. The alteration from the normal may not be impressive, and there is a difficulty in determining the latitude the pathologist allows himself in describing varied numerations of cells as "within the normal." If, however, the departure from the usual, no matter how small, is fairly constant on three examinations, it will be safe to act on it.

The Implication of the Tonsils.

It has been established that living organisms cannot pass into the substance of the tonsil if the epithelium lining the crypts is intact. The clinical manifestation of ulceration of this protective layer is, I take it, enlargement of the associated cervical glands. Based on this argument many authorities hold that general symptoms can only arise when this ulceration of epithelium has taken place, but, personally, I cannot agree that colonies of bacteria in intact walled crypts are innocuous. If the drainage of the crypt is perfect, then probably no harm will result; crypts, however, by reason of their shape, are not readily drained, particularly if there is associated fibrosis. Other organic chemical substances are readily absorbed through the mucosa of the upper respiratory tract; why not toxins?

While a rapid inspection of the fauces with a tongue depressor may be sufficient to note superficial appearances, such a means of examination is generally inadequate. It is necessary to look at the adenoids with a post-nasal mirror or nasopharyngoscope, ascertaining the size and position of the mass and noting any discharge issuing from its pouch, which may be looked upon as the analogue of a crypt in a faucial or lingual tonsil. The shape of the nasopharynx and the appearance of the choanæ are also to be noted.

The faucial pillars having been scrutinised for any signs of inflammation, the faucial tonsils are inspected; for this purpose the use of a second tongue depressor to retract the anterior pillar is a great help, particularly if the tonsils are imbedded. The colour and size of the tonsils is observed, and the presence of any purulent material or cryptic contents is noted. Palpation will ascertain if they are tender, hard, or soft, and if the finger presses firmly on the outer part of the anterior pillar in a backward direction, as if to push the tonsil out of its fossa, some idea may be formed as to how firmly it is attached to the pharyngeal wall. Then, with a bent sterile probe, the condition of the crypts and their contents is investigated, after a little tincture of iodine has been dabbed on the tonsil. Similar observations can readily be made on the lingual tonsil with a laryngeal mirror. Finally, the condition of the submaxillary and inferior parotid groups of cervical glands is examined, and only then can an opinion be given.

Indications for Tonsillectomy.

If the tonsillar tissue is merely hyperplastic—that is, if no inflammation is present—and if it is not causing obstruction, then there is no indication for operation.

On the other hand, if there are definite signs of obstruction, but only in the nasopharynx, then the adenoids alone should be removed. Dyspnœa and ear symptoms referable to hyperplasia of the faucial tonsils will call for their extirpation. If examination suggests that infected adenoids are responsible for an ear suppuration, chronic rhinitis or sinusitis, pharyngitis or laryngitis, or, particularly, a retropharyngeal abscess, their removal is indicated. A definite history of peritonsillitis, or the presence of enlarged cervical glands not demonstrably due to another cause (teeth, malignant disease, syphilis, Hodgkin's disease, leukæmia, &c.), are clear indications for operation on the faucial tonsils, or, if the inferior parotid glands are involved, on the adenoids. If examination confirms that the faucial tonsils are responsible for recurrent sore-throats, repeated "colds" which always begin in the throat, frequent

enlarged glands, chronic rhinitis, inflammatory conditions of the ears, pharynx, or larynx, or that they are playing a part in a local degeneration such as otosclerosis, then they should be excised. In systemic disease, if the tonsils show evidence of chronic (or rather continued) inflammation, in which the pillars of the fauces may share, and are hyperæmic, tender, fibrosed, or adherent to the wall of the pharynx, and (or) a pure culture of streptococci is obtained from their crypts, and especially if they are associated with "glands," then they must be sacrificed.

Recommendations.

From the fruit of a fairly extensive experience, which has not been by any means an uninterrupted march of infallibility, I offer three hints. First, exclude neoplasms and blood dyscrasias before setting forth to remove what appear to be "just ordinary tonsils." Secondly, if there is any tendency on the part of the patient to bruise readily, have a blood coagulation test done. Lastly, the possible presence of congenital syphilis should be kept in mind when one is asked to remove adenoids for "catarrh" or nasal deformity.

Clinical and Laboratory Notes.

TWO CASES OF ATYPICAL TETANUS.

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THE reports of two cases of cephalic tetanus, one by Drs. Fletcher and Fitzpatrick and one by Dr. McNeil Simpson, in THE LANCET of Sept. 10th and 17th respectively, afford me the opportunity of placing on record two examples of atypical tetanus which I saw some years ago.

CASE 1.—A schoolboy, aged 18, consulted me on Oct. 16th, 1918, on account of a small pustule on his right cheek.

History.—A fortnight previously he had cut himself while shaving before playing football on a muddy ground. An early fall smeared his face thickly with mud and the wound remained painful and did not heal. He had been away from home, sitting for a scholarship examination, and when he returned his mother noticed considerable swelling and redness of the right cheek and right side of his neck.

Examination.—There was marked redness and swelling of the right side of the neck filling up the space below the angle of the jaw and extending upwards in front of the right ear. A small pustule was discharging just below the prominence of the cheek and between this point and the right angle of the mouth. The temperature was normal and the pulse 100. There was no fluctuation, but the area was brawny and tender, especially behind and below the angle of the jaw. There was no spasticity of the muscles, but some pain in the lower jaw on the right side when the mouth was opened.

At this time there was no evidence of tetanus, and the lesion was thought to be a subacute lymphadenitis of the glands draining the cheek—the pre-auricular gland and those in the neck below the angle of the jaw.

Two days later, as there was no material improvement after fomenting, the boy was seen a second time. The redness and swelling had become more localised to the neck, but there was still redness and œdema of the whole right side of the face as well. The boy was therefore sent to a nursing home and an incision made in the centre of the swollen area over the point of maximum tenderness. No pus was found, and a prophylactic injection of antitetanic serum of 1500 units was given subcutaneously. Next day the swelling was considerably less. There was some pus discharging from the incision and the wound in the cheek was firmly healed.

Three days later the conditions in the neck had still further improved; there was only a slight discharge from the incision and swelling was localised to this area alone. The redness and œdema had vanished. The patient felt very well except for some abdominal cramps which had worried him through the night, but which he had not hitherto mentioned. On pulling down the bedclothes I was horrified to observe intermittent contractions of the recti muscles of the abdomen. These were easily provoked by exposure, by light touch, and even by pretending to flick the skin in the boy's sight. The spasms were accompanied by shooting pain. On palpation the abdomen felt somewhat rigid, but not markedly so. With the onset of his spasms the abdomen became board-like. It seemed clear, therefore, that the condition was one of tetanus rendered abnormal by the injection of serum. It was hoped that the prophylactic injection of serum, added to the long incubation period, would justify a favourable prognosis. Prof. Thomas Sinclair kindly saw the boy with me the same day. He agreed with the diagnosis and the case was treated in accordance with the method described by Purves-Stewart—namely, 3000 units of antitetanus serum were given hypodermically, 3000 intravenously, and 1500 units intrathecally, after the withdrawal of a like amount of cerebro-spinal fluid. Next day 3000 units were given hypodermically and 3000 intravenously. For a week gradually diminishing doses of serum were continued until 30,000 units in all had been given.

The spasms ceased abruptly after the first series of injections, and the boy made an uninterrupted recovery. He has since gained considerable distinction, both in the examination room and on the athletic field, though a rather extreme degree of "nerviness" has been attributed, justifiably or not, to the use of the serum.

Cephalic Tetanus.

CASE 2.—On Friday, July 21st, 1922, I was asked to see a boy aged 5.

History.—On Monday, July 10th, he fell on his head from a wall five feet high in a farmyard. The right side of his forehead struck the ground and sustained a wound at the junction of the brow and scalp. The wound was about one and a half inches long and was situated about one inch from the middle line. He was somewhat dazed by the fall, but did not lose consciousness. The wound was dressed and sutured the same day. For two days and nights the boy was poorly, and on July 13th the stitches were removed and a fair amount of pus escaped. Next day the boy could not be induced to get out of bed, and even at this early stage his mother thought there was some asymmetry in his face. This asymmetry became more marked on the following days, and on the 21st—11 days after the fall—he could not swallow fluids and had some difficulty in separating his teeth. It was on this day that I saw him for the first time in consultation with his own doctor. I noted the following:—

1. A wound of the right frontal region about one inch from the middle line. This was apparently firmly healed and painless. 2. There was no sign of depression, irregularity, or tenderness in this neighbourhood. 3. The face as a whole was passive and mask-like. When the mouth was opened, the left angle was drawn outward and downward, the other parts of the face remaining immobile. The naso-labial fold on the right side was obliterated. 4. The child could not swallow. When he tried to take water there was a tonic spasm of all muscles of the face and neck, the water being expelled intermittently by a series of short expiratory explosions. He objected strongly to taking any kind of fluid into his mouth and seemed to be frightened when he was forced to do so. 5. There were no intermittent spasmodic contractions other than those produced by trying to swallow water. We watched him carefully for an hour without observing a single one, though his mother had seen them. 6. There was a tonic spasm in both sternomastoids, both splenii capitis, both recti abdominis, and the adductors of both thighs. This spasm was moderate in all muscles—e.g., his chin could with difficulty be brought down to his sternum, the thighs could be abducted, and the head could be laid on either shoulder. His masseters were somewhat more tightly contracted than the other muscles, but the tip of the tongue could be protruded and was not deflected. 7. The pupils were equal and dilated, and reacted rather sluggishly both to light and accommodation. The movements of the eyeballs were apparently normal. 8. The condition of the arms, chest, and abdomen, apart from the recti, was normal. The pulse was 120 and the temperature 98° F. The knee-jerks were somewhat exaggerated, Kernig's sign was absent, and tache cérébrale absent also. 9. The mental condition was quite clear. 10. The most marked feature was a striking right-sided facial paralysis which affected the whole of the right and upper part of the left side of the face. When he tried to close his eyes both globes moved upwards, but the lids themselves did not close. The only part of the face which could perform voluntary movements was the left lower quadrant. The mother told us that the whole face took part in the convulsions.

Having considered the other common causes of facial paralysis—depressed fracture of the skull, fissured fracture tearing the seventh nerve, hæmorrhage, meningitis, and abscess of the brain—we ultimately concluded that the case

was one of abnormal tetanus of the cephalic type. This view was corroborated by: (*a*) The distribution of the paralysis, affecting the side of the wound and the contiguous part of the opposite side of the face. (*b*) The mental condition of the child. (*c*) The fact that convulsions affected the apparently paralysed muscles. (*d*) The tonic contraction found in other muscles, such as the sternomastoids, recti abdominis, adductors, &c. (*e*) The condition of the pupils. (*f*) The so-called "hydrophobic" symptoms when fluids were taken into the mouth.

The boy was treated at once with all the antitetanic serum available in the village near which he lived, and next day by large doses by the various routes. In spite of this, however, more muscles became affected, and he died on the thirteenth day from the receipt of the scalp wound and the second day after I had seen him.

These atypical forms of tetanus have had an added importance in recent years owing to the prevalence of encephalitis lethargica. I have seen two patients with this disease in whom a localised painful contraction of a muscle group closely resembled that found in the early stage of a case of atypical tetanus. In the former, however, complete relaxation of muscle occurs between the spasms; the spasm cannot be provoked by slight stimuli as in tetanus; and even large doses of antitetanic serum have no controlling power upon their occurrence

A case of atypical tetanus has been recorded [2] in which an abdominal operation was actually performed, with a fatal result. In this case the violence of the spasms burst the wound on three separate occasions, and death was due to a low type of peritonitis after all convulsions had ceased for several days. It is reasonable, therefore, to assume that with a correct diagnosis the patient's life would have been spared.

There are many recorded examples of abnormal types of tetanus. As Simpson says, they are certainly rare in any one man's experience, but their recognition becomes daily of greater importance, since the increase in potency of antitetanic serum would seem to justify the hope that, even where the incubation period is short, lives will be saved by its prompt use. They will not, however, be saved unless they are diagnosed early.

RECOVERY OF STREPTOCOCCUS SCARLATINÆ FROM EXPERIMENTALLY INFECTED BOOKS.

BY A. R. BALMAIN, M.B., B.S. LOND., D.P.H. OXF.

(*A Report from the Southern Group Laboratory, Metropolitan Asylums Board.*)

THERE appears to be no certain information that scarlatinal infection is ever carried by books.[3] The whole of the information at present available on this subject rests on surmise, and administration in preventive medicine is handicapped by this lack of exact knowledge.

This investigation was an attempt to ascertain, under experimental conditions: (1) if the *Streptococcus scarlatinæ* would survive on books; and (2) the length of time this organism would live.

Whether infected books can give rise to fresh attacks of scarlet fever is a question which can only be determined by actual infection of human volunteers susceptible to the disease.

The basis of the following work rests on (1) the establishment of the *Streptococcus scarlatinæ* as the cause of the disease by the Dicks,[4] and its confirmation by other workers, and (2) the use of the intracutaneous test (Dick test) as a criterion of the specificity of the organisms used.

[3] S. T. Irwin: Brit. Jour. Surg., vol. ix., 308.
[3] McCartney, J. E.: THE LANCET, 1925, ii., 212.
[4] Dick, G. F., and Dick, Gladys H.: Jour. Amer. Med. Assoc., Oct. 6th, 1923, p. 1166.

Methods Used in this Investigation.

Two strains of streptococci were isolated from the throats of early cases of scarlet fever. The reactions of these strains were investigated and toxins prepared from them. The toxins (diluted 1 : 1000) were tested on known positive and negative human controls by the intracutaneous method (Dick test) and gave appropriate reactions.

Cultures of these organisms in blood broth were sprayed on to the pages of books in large and small doses. The streptococci from these books were recovered and isolated daily, both by smearing pieces of the infected pages over blood agar plates and dropping other pieces into tubes of blood broth. The heavily sprayed books were examined for 28 days and the lightly sprayed ones for 18 days.

(*a*) *Type of Book.*—The books used were: eight ordinary ruled unused exercise books, two exercise books with ink writing, two printed books with rough paper.

(*b*) *Preliminary Control Test.*—This was performed for all the books before inoculation by the methods described under (*d*). They all contained sporing bacilli allied to the *subtilis* group, and some books a few staphylococci. No streptococci of any kind were found.

(*c*) *Method of Spraying.*—The books were sprayed with the whole blood broth cultures. The spraying was of two kinds: (1) heavy spraying with a nasal atomiser so that every alternate page or selected pages were soaked (dried in three days); (2) light spraying with a scent sprayer on every fourth page (dried same day). This corresponded to a good droplet infection.

(*d*) *Method of Recovering Organisms.*—For the first 14 days the books were examined daily, then every three days. A piece was cut out of an inoculated page of each book using sterile scissors and forceps. Separate pieces of paper thus obtained were (1) smeared on blood agar plates, and (2) rolled up and dropped into blood broth tubes. After 24 hours' incubation the plates and tubes were examined microscopically for hæmolytic streptococci and where necessary by further sub-culture.

(*e*) *Environment.*—The books were kept in glass jars under different environmental conditions as regards air, light, and temperature, but no difference in the time of recovery of the organisms was demonstrated.

Results.

It was found that: (1) The number of streptococcus colonies obtained on blood agar from the infected books diminished in number after six days (=surface infection), and no streptococci could be isolated by the twelfth day from two of these books. (2) The number of streptococci discernible in stained smears from the broth tubes diminished in 11 days. (3) With heavily sprayed books recoverable streptococci were scanty by the 18th day; not recoverable from one book on the 26th day; only in very small numbers from the other books on the 28th day. With lightly sprayed books streptococci were definitely present in scanty numbers on the 18th day.

An attempt was made to determine the period of viability of *Streptococcus scarlatinæ* on books directly inoculated by droplet infection by two cases of scarlet fever. This experiment was not completed.

This investigation has thus shown that the *Streptococcus scarlatinæ* under experimental conditions will survive on inoculated books and can be recovered from them during a period of four weeks. The number of streptococci was scanty after the second week from the time of inoculation.

I am indebted to Dr. J. E. McCartney for his encouragement and advice; to Dr. T. H. Woodfield for placing cases at my disposal; and to the Metropolitan Asylums Board for permission to undertake research work in their laboratories.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

CRIMINAL LAW AND INSANITY.

LORD HEWART (Lord Chief Justice) delivered the fifth David Lloyd Roberts lecture on Nov. 16th at the Medical Society of London before a large and distinguished audience. The chair was occupied by Mr. HERBERT W. CARSON, President of the Society, who reminded his hearers that the lecture was founded by a former Fellow of that Society and was delivered in rotation at the Royal College of Physicians of London, the Medical Society of London, and the Royal Society of Medicine.

Medico-Legal Misunderstanding.

The medical profession and the legal profession seem, said Lord HEWART, to have so much in common, and to be devoted in so unusual a degree to the public welfare, that any real misunderstanding between them upon a matter of public importance would be much to be deplored. Yet from time to time it is possible to discern some indications, at any rate, of a lack of complete harmony in the views with which the two professions respectively regard, or tend to regard, the attitude of the criminal law towards insanity. The true description of the subject matter of that difference, or apparent difference, is of no small importance. Accuracy in this point is essential, and lack of it has sometimes led to mistakes. The subject matter is not insanity, but the attitude of the criminal law towards insanity. It is natural enough, no doubt, that the medical profession and the legal profession should regard and examine insanity from somewhat different points of view. That circumstance, far from being matter for regret, is matter for positive satisfaction. What is to be regretted, if it exists, is a difference of view not upon insanity, but upon the actual and the proper attitude of the criminal law towards insanity. It is probably an underlying misconception of the precise nature of the subject matter that has led to a difference which is more apparent than real.

The Legal Principle.

The leading principle of the criminal law of England relating to insanity, Lord Hewart continued, is capable of brief and clear statement. It is still to be found in the answers given by the judges to the House of Lords in McNaghten's case. The law is that every man is presumed to be sane and to possess a sufficient degree of reason to make him responsible for his acts until the contrary is proved to the satisfaction of the jury who are trying him. In other words, the burden of proof where insanity is pleaded is upon the defence. It is not for the prosecution to establish the sanity of the accused; his sanity is presumed. It is for the accused to prove, if he can, that at the material time he was, within the meaning of the criminal law, insane. It is to be observed that the word is "prove"; it is not "suggest," nor "indicate," nor "insinuate," nor any such word, but "prove." Nothing short of proof is sufficient. In order to establish a defence on the ground of insanity it must be clearly proved that at the time of the committing of the act the person accused was labouring under such a defect of reason from disease of the mind as that he did not know the nature and quality of the act he was doing; or if he did know, that he did not know he was doing what was wrong. The meaning of these words is sufficiently plain. The crucial time is the time of the committing of the act, and not some other time, either earlier or later. A sufficient defence of insanity relating to that time must satisfy three several conditions, the first two of which are in every case obligatory, while as to the third—contrary to an error which is by no means uncommon—there is a choice of alternatives. It must be proved, that is to say, first, that the accused was suffering from disease of the mind; secondly, that in consequence of that disease he was labouring under a defect of reason; thirdly it must be proved that that defect of reason so brought about was of one of two particular kinds. It is here that the alternatives arise.

An Alternative Defence.

The defect of reason due to disease of the mind must be clearly proved to be such as either (1) to prevent him from knowing what he was doing, or (2) to prevent him from knowing that he was doing what was wrong. The defence is not required to prove that both condition (1) and condition (2) were fulfilled, but it must prove the fulfilment of one or other of them. This third requirement, with its two alternatives, may serve to illustrate the difference between the standpoint of the physician and the standpoint of the criminal law. For the purposes of a physician examining a person in order to ascertain whether he is insane, it may be enough to find that the patient is suffering from disease of the mind and is, in consequence, labouring under a defect of reason. When those two facts are established it may follow, naturally enough, that the patient needs medical care and attention. But when the question is the very different question whether a person is to be excused from responsibility for what appears to be his criminal act, the criminal law insists upon further investigation; disease of the mind, of itself, will not afford an excuse. Consequential defect of reason will not, of itself, afford an excuse. If excuse there is to be on the ground of insanity, it must be further established that the defect of reason was of a particular kind and exhibit particular characteristics; that is, at the material time it prevented the accused person from knowing what he was about, or, in the alternative, prevented him from knowing that he was doing what was wrong. A little reflection shows the importance and value of this third requirement. It satisfies at least two tests. In the first place, it seems to be manifestly in accordance with justice and good sense, as it is in accordance with the principles of the English Criminal Law that a man should be excused from criminal responsibility if, through mental disease, he is, at the time of his act, in such a state of unreason as not to know what he is doing. That, of course, is what is meant by not knowing the nature and quality of his act. It means, for example, that he thought he was peeling an apple when he was, in fact, cutting a throat. And a like observation may be made when a man is, through a like cause, in such a state of unreason that although he knows what he is about, he does not know that he is doing what is wrong. Such was the case of a middle-aged woman who strangled her mother-in-law, laid the dead body on the hearthrug, and brought in the neighbours to see how well she had done her work. "It was my duty to do it," she said, "and, you see, I have done my duty."

In the second place, this requirement of the criminal law has the effect of providing a useful test and criterion which the evidence in the case may well enable a jury to apply. In other words, what the prisoner has said, what the prisoner has done, and the surrounding circumstances very often yield material which helps the judge and the jury to perceive whether it is true to say that at the crucial time he did not know what he was doing, or did not know that he was doing what was wrong.

The Law does not Define Insanity.

Such, said Lord Hewart, is the leading principle of the English criminal law upon the matter. The law does not purport or presume to define insanity; that is a medical question. What the law considers is the conditions which have to be satisfied in order that a person may be excused from criminal responsibility. That is a legal question. And, at present at any rate, that question is answered, in this country, in accordance with the principles laid down in McNaghten's case. It is possible, no doubt, to find in text-books, and especially in footnotes, passages which seem to entertain, or to suggest, a broader—not to say a looser—view. It is even possible, perhaps, to find, here and

there, a similar passage in the report, whether accurate or not, of an individual summing-up in a capital case. But the law remains, and it is never to be forgotten that, as matters now stand, it is only the defendant who can appeal to the Court of Criminal Appeal. No such opportunity is open, in England, to the prosecution. Nor is it to be forgotten that while a physician tends to regard primarily the interests of his patient, the criminal law is concerned with the public security. "When I am invited," said Sir Matthew Hale, "to pity the criminal, I reflect also that there is a pity due to my country." That is not to say, of course, that criminal responsibility should be imputed where it does not really exist; but it does mean that criminal responsibility should not be overlooked in those to whom it properly belongs.

There is no reason why time should be consumed in the examination of the silly, the ignorant, or the captious criticisms which have from time to time been directed against the principle of the English law. The ancient philosopher, as everybody recollects, drew a distinction that remains eternally sound, between the kind of controversy called eristic, which seeks triumph, and the kind of controversy called dialectic, which seeks truth. No serious person in this matter has any concern with any argument or representation which does not seek to elicit and to establish what is true. Charlatanism and chicanery, for which, of course, there is a rich and attractive field, may be left severely alone. It would be idle, and worse than idle, to dwell upon their suggestions or to advertise their authors. On the other hand, every serious person is deeply concerned to examine every argument or representation which does aim at the truth, and to treat their authors with sincere respect, however acutely opinions may differ. The test was brought to a point five years ago when, after a certain notorious trial for murder, a committee was appointed, under a learned chairman of high distinction, to consider, among other things, any changes which might be desirable in the existing law relating to criminal trials where the plea of insanity is raised as a defence. The Council of the British Medical Association, among others, tendered evidence and submitted representations to the committee; the materials are fully set out in the extremely interesting and valuable report of the committee, dated November, 1923, and presented to Parliament in 1924. It seems accurate to say that the Association, in substance, approved the rules in McNaghten's case, but added the qualification that no act should be regarded as a crime if at the time when it is done the person who does it is prevented by defective mental power or by any disease affecting the mind from controlling his own conduct, unless the absence of the power of control is the direct and immediate consequence of his own default. The committee so far agreed with the report of the Association as to recommend, first, that it should be recognised that a person charged criminally with an offence is not responsible for his act when the act is committed under an impulse which the prisoner was, by mental disease, in substance deprived of any power to resist. And, secondly, that in other respects the rules in McNaghten's case should be maintained.

Suggested Modification of the McNaghten Rule.

It is important to see clearly the effect which this modification, if it were adopted, would produce upon the existing rule. Is it not manifestly an alteration, and a fundamental alteration, in what has been described as the third requirement or condition? In other words, if the suggested modification were accepted it would be immaterial that the prisoner knew what he was about, or that he knew he was doing what was wrong. He might, indeed, be well aware of the one and the other; but he would still be excused from criminal responsibility if he committed the act under an impulse which he was, by mental disease, in substance deprived of any power to resist.

This suggestion, whatever its merits may be, is not at all a product of the twentieth century; it is really, if the phrase may be employed without disrespect, the ancient and dangerous plea of the uncontrollable impulse, which, in practice, is so difficult to distinguish from the impulse that is not in fact controlled. The doctrine, it will be seen at once, involves two propositions which are by no means of the same kind, nor indeed upon the same plane. The first proposition is a proposition of fact—namely, that there are as a matter not of scientific imagination nor of controversial speculation, but of actual experience, unfortunate persons in existence who, though they know what they are about and also know that they are doing wrong, are nevertheless impelled by diseased and irresistible impulse to commit an apparently criminal act.

The second proposition is a proposition of legislative morality or expediency—namely, that these persons, by reason of their number or otherwise, are of such importance as to require or deserve a fundamental revision of the criminal law. It seems to be highly necessary to observe the distinction and the real difference between the two propositions.

The Plea of Uncontrollable Impulse.

As to the first of them, a mere lawyer would, of course, hesitate much before he ventured to express an opinion. It appears evidently to become a proposition of a kind which belongs rather to the field of medical observation and experience, not, of course, provoked by questions asked in a particular cross-examination, but derived from special opportunities of general study in an extremely difficult branch of scientific inquiry and research. Let it be granted, therefore, for the sake of the argument—and for the sake of the argument alone—that persons of this unfortunate type do in fact exist; the question remains whether, for that reason, it is just and necessary to entertain or to make a drastic alteration in the criminal law. A moment's reflection will show how widely the door would be thrown open if the alteration were made. The objective tests for judge and jury would immediately and finally disappear. It would be of little use to explore the evidence in order to ascertain whether in the particular case the prisoner was perfectly well aware of what he was doing, or perfectly well aware that he was doing what was wrong. The crucial, the overriding, the dominant question would forthwith come to be whether he was acting under an irresistible impulse. And upon what materials and with what guidance would the jury be called upon to answer that question? Would there be any materials or guidance at all, except the medical opinion, which the prisoner might be fortunate enough to be able to adduce in his favour, contradicted by the medical opinion which might be offered on the part of the prosecution?

It seems natural to ask what are the true dimensions of the difficulty for which so far-reaching a solution is suggested. Upon this important question the report of the committee already referred to may be thought to be illuminating. "It was established," the report says, "to our satisfaction that there are cases of mental disorder where the impulse to do a criminal act recurs with increasing force until it is, in fact, uncontrollable. Those cases of mothers who have been seized with the impulse to cut the throats of, or otherwise destroy, their children, to whom they are normally devoted, are not uncommon."

To pause there for a moment, it is interesting to note that the illustration which is selected is the case of a mother killing her child. But already a special statute which deals with infanticide offers a lenient alternative in cases of mental disturbance falling far short of insanity, where a mother not yet fully recovered from the effects of childbirth destroys her newly born child.

"Guilty but Insane."

To return, however, to the report of the committee, the very next sentence after the two sentences just quoted is in these words: "In practice in such cases the accused is found to be 'guilty but insane.'" I not that a very remarkable statement? It seems to say, in the clearest possible language, that what is

required is already done. If the proposed change in the law were made the verdict in such cases would be the verdict which is briefly, popularly, and inaccurately described as "guilty but insane." But this verdict, it appears, is, in practice, already returned in such cases.

What, therefore, remains? "We appreciate," the committee frankly add, "the difficulty of distinguishing some of such cases from cases where there is no mental disease, such as criminal acts of violence, or sexual offences, where the impulse at the time is actually not merely uncontrolled, but uncontrollable." And yet a far-reaching change in the law is recommended apparently upon the ground (to quote the exact words) "that the McNaghten formula is not logically sufficient." Now, even if the hypothesis already set out be accepted as true, it may be thought that lawyers and statesmen will hesitate long before they open the door to a quite incalculable flood of mischief for the purely academic purpose of giving logical sufficiency to a formula, or a superior degree of correctness to verdicts which, in practice, are already returned. But, indeed, the doctrine or theory of the uncontrollable or irresistible impulse is not in the smallest degree novel. It is, without doubt, older than the McNaghten case itself, and therefore may be taken as having been considered and rejected by the learned judges who answered the questions in that case. In the year 1859—that is, 16 years after the McNaghten case—the matter was referred to by a great judge in a well-known case. "If an influence," said Baron Bramwell in R. *v.* Haynes, "If an influence be so powerful as to be termed irresistible, so much the more reason is there why we should not withdraw any of the safeguards tending to counteract it. There are three powerful restraints existing, all tending to the assistance of the person who is suffering under such an influence—the restraint of religion, of conscience, and of law." But if the influence itself is to be held a legal excuse, rendering the crime dispunishable, you at once withdraw a most powerful restraint, that forbidding and punishing its perpetration. Four years later—in 1863—Mr. Justice Wightman, in R. *v.* Burton, referred to the doctrine of the uncontrollable impulse as a most dangerous doctrine, fatal to the interests of society and the security of life.

The Security of the Public.

As to the suggestion, which is more often implied than expressed, that under the law, as it now stands, some prisoners are wrongly held to be fully responsible, it may be doubted whether any lawyer knows of any such case. The tendency is the other way—that is, to accept the defence of insanity, especially in a case which for any reason excites sympathy, upon materials which are too slender. This course is, no doubt, regarded as humane to the prisoner. But perhaps it pays too little attention to the misery of prolonged confinement in what is called a criminal lunatic asylum. For the security of the public, on the other hand, can there be any real doubt that the comparative stringency of the existing law is necessary? After all, the mere fact that a man thinks he is John the Baptist does not entitle him to shoot his mother. And if a man of abnormally jealous disposition entertains suspicions as to the chastity of his wife and his suspicions become what it is fashionable to call an obsession and finally a fixed delusion, is he with impunity to kill her by poisoning, having done all he could to conceal the crime?

It seems true to say that in cases where there is evidence of real mental disease antecedent to the commission of the alleged crime, and there is no evidence of a motive which might influence a sane person, juries have no difficulty in finding either that the prisoner did not appreciate the nature of his act or that he did not know it was wrong.

But if, Lord Hewart concluded, the law were relaxed in the way which has been suggested, it might well be that in cases where there has been no such evidence of mental disease antecedent to the alleged crime, mental experts would be found to say that the alleged crime itself afforded evidence that it was committed under an uncontrollable impulse, and that upon that ground the inference might be based that there was mental disease. If so, the result might be to transfer to a section of the medical profession the question whether a great number of ordinary criminals should be held responsible to the law.

ROYAL SOCIETY OF MEDICINE.

A COMBINED meeting of the Sections of Electro Therapeutics, Medicine, Surgery, and Orthopædics was held on Nov. 17th, Sir HENRY GAUVAIN, President of the Section of Electro-Therapeutics, in the chair. The subject of discussion was

RADIOLOGICAL PITFALLS.

Dr. A. E. BARCLAY (Manchester) said that radiology could only show the gross outline and the density of the substances which the rays traversed. However vital the X ray evidence might be, the radiologist should not use the word diagnosis.

For present purposes he regarded a pitfall as no more than an appearance which gave rise to a blunder—the blunder being self-evident as soon as the interpretation was known. Unless there was real urgency it was desirable to carry out a definite routine and to study a radiograph quietly. This routine might sometimes appear to cause delay, but it would obviate many mistakes which were due to haste. If the radiologist knew beforehand what diagnosis had been reached clinically this knowledge must prejudice his own decision; but he should be supplied with all the vital points in the history of the case, so that he could make his examination on the right lines. There was always a tendency to look for the things which one expected to find, and the physician's diagnosis was very liable to be biased by the radiographic findings. The danger of prejudice was so great that it was of doubtful benefit to the patient if the clinician did his own radiology. The best plan was for the radiologist and the physician to come to their conclusions independently and then to discuss the case together afterwards. The tendency at present was to put too much responsibility on the radiologist.

It was obvious that unless films were of good quality their inferiority was in itself a real pitfall; another cause of error was dark-room carelessness. Dr. Barclay showed a number of skiagrams illustrating his argument. In early lesions of bone, he said, such as those of osteomyelitis, it should be remembered that the changes took time, and at an early stage the radiogram might give either no indication or a wrong interpretation. In conclusion he declared that most pitfalls could be avoided if the radiologist kept his mind alert not only radiologically but also medically, and seldom departed from a well-ordered routine.

Dr. E. I. SPRIGGS (Ruthin) spoke of the danger of allowing a radiological or other special examination to be a substitute for a study of early history and clinical symptoms. The radiologist shared with the surgeon and morbid anatomist the capacity to find something; the question was, had the something anything to do with the illness of the patient? A finding could not be regarded as a diagnosis. "Dropped stomach" or "dropped colon" was not a diagnosis; such a condition resulted from something outside the viscus, and to cure the viscus would not necessarily cure the patient. The second great cause of mistakes was a lack of coöperation between the radiologist and the physician. The radiologist should be told something of the general clinical character of the case. A third class of pitfall was that due to a partial or imperfect examination. Certainly many errors could be avoided by taking oblique skiagrams. A fixed technique meant incomplete examination, and no means which could yield information should be neglected. Dr. Spriggs also demonstrated a series of skiagrams.

Mr. MAX PAGE gave consideration to mistakes in the diagnosis of fractures and in the recognition of malignant bone disease. He had seen a number of gross errors in both these categories and had considerable sympathy with those clinicians who said that

nowadays the radiologist was allowed to take much too important a part in diagnosis. This was especially true in the matter of teaching. Radiology was a physical method which one should make use of as an addition to the information conveyed by the senses, but not as a substitute for it. The omission to take two radiographic views of a case sometimes resulted in foolish mistakes. Stereoscopic views should also be available. Not long ago even competent radiologists failed to provide the surgeon with a lateral view of the spinal column which was of any value in the interpretation of the bone condition. He demonstrated by a series of skiagrams the kinds of mistake caused by misinterpretation of X ray findings. Odd and unusual ossicle formations sometimes caused much hesitation —e.g., in connexion with sesamoid bones—whilst extra ossicles on the patella gave the impression of loose cartilage in the knee. These cases laid definite traps. He had been struck by the futility of relying on radiological plates to diagnose early tumours of bone. In cases of central cyst, or central tumour, or central abscess of bone, the diagnosis must not be attempted by radiology, for a number of serious cases would be missed by waiting for positive radiographic findings. Radiograms would not show whether a condition was simple or malignant; the early development of periosteal sarcoma was not shown by the ordinary radiogram.

Mr. H. A. T. FAIRBANK said that two not uncommon causes of inaccurate diagnosis were ignorance of the normal anatomy, as seen on the X ray plate, and forming conclusions on a case when the film was imperfect. He did not know of any more difficult cases to diagnose than those presenting a suspicion of caries of the spine. In such instances he refused to give an opinion without being supplied with good stereoscopic and antero-posterior films. Several cases of supposed caries were found to owe the spinal deformity to a developmental error. Sarcoma of the spine, perhaps associated with paraplegia, might cause a good deal of diagnostic difficulty. It was difficult to be sure, from the skiagram, of an early stage of adolescent coxa vara. When the displacement was slight a lesion of the epiphyseal line was often overlooked, especially if the film was not very clear. The two femora should always be compared.

Dr. A. F. HURST said that the earliest radiological sign of a growth in the stomach was a fading away of peristalsis as the wave passed along the greater or lesser curvature, a sign which an X ray plate did not reveal. Gastric ulcer near the cardia should only be diagnosed after careful consideration, as most of the abnormalities in that situation were not ulcers, but congenital gastric diverticula. Stasis alone—even a 12-hour stasis—should not be deemed a sufficient reason for diagnosing pyloric obstruction; to justify such an opinion there should also be exaggerated peristalsis. Quite 95 per cent. of cases of pyloric obstruction which were not caused by a new growth were due to duodenal rather than gastric ulcer. A pre-pyloric ulcer was very rare. In pyloric obstruction the stomach was nearly always full of gastric juice when the patient presented himself fasting in the morning. The stomach should be emptied by means of the stomach-tube, after which a meal should be given. The pyloric end of the stomach could then be seen and barium could be seen passing through the narrow pylorus and the irregular duodenum, and the duodenal obstruction was displayed. In such a patient duodenal deformity did not mean that duodenal ulcer was active; it was seen in all types, perhaps 20 years after an ulcer had healed, whether as a result of gastro-jejunostomy or of medical treatment. An ulcer should only be considered active when clinical or laboratory signs showed that it was so. Adhesion at the right iliac fossa was a favourite diagnosis when pain occurred in that region after the appendix had been removed. But this conclusion should not be drawn, whether the patient's appendix had been removed or not, without carrying out the very important test of inflating the rectum and pelvic colon with air. This would unravel the terminal ileum. Another error arose from diagnosing ileal stasis, a condition which hardly ever existed; whilst still another mistake was to conclude that the finding of a stomach low down meant gastroptosis. Sometimes the condition was simply a congenitally long stomach. The same remark applied to ptosis of the transverse colon. In 50 per cent. of young girls the cæcum was erect. Mistakes could also be made concerning the tone of abdominal viscera. At one time he had thought that duodenal ulcer was necessarily associated with a hypertonic stomach, but investigation had now shown him that the tone in these cases was not abnormal. The tone was shown by the upper level of the gastric contents.

Dr. A. C. JORDAN showed skiagrams illustrating intestinal conditions. Errors could often be avoided, he said, by never omitting a barium enema, as this showed kinks in the pelvic colon which the bismuth meal did not reveal, as it did not fill the lateral portions of the large intestine.

Dr. H. WARREN CROWE (Harrogate), speaking on radiography of the teeth, said that this could never prove that a tooth was healthy, however perfect it might appear. On the other hand, a radiogram made it possible to say that a tooth was infected. It was a mistake to suppose that because the bone round a tooth was fibrous, dense, or sclerosed, therefore that tooth was not as dangerous as one which had an apical granuloma by its side. As a matter of fact the presence of such dense bone round a tooth indicated a greater danger of the system becoming infected than did an apical granuloma. The last pitfall he mentioned was that of concluding, because the teeth were very bad, that any systemic disease the patient had was necessarily caused by their presence.

Dr. F. HERNAMAN-JOHNSON emphasised a remark made by Dr. Jordan, that when an abdominal lump disappeared after an enema had been given it was dangerous to assume that it had been merely a collection of fæces; it might be the first evidence of carcinoma, which had set up a functional paralysis which was the direct cause of the fæcal accumulation. Mistakes might arise when dealing with an accident or emergency in a patient's house. In one such case following a motor accident a neurologist had been sure that the trouble was at the eleventh and twelfth dorsal vertebræ. The patient was in great pain and it was difficult to get the plates for the skiagram in position. Dr. Hernaman-Johnson had got a plate as far as the second lumbar and was told there was no need for anything further. The symptoms were put down to shock. The patient did not get well, however, and six months later he skiagraphed the whole spine and found a very distinct fracture of the third lumbar spine, which had been missed in the previous examinations. The moral of this case was to decline to accept what others said about a case and to investigate at least five or six vertebræ around the site of the alleged injury. He was quite sure ileal stasis existed as he had seen a case of it. He also thought, in spite of what Dr. Hurst said, that now and then actual ulcers occurred towards the cardia, though they might be missed unless the patient was first examined in the horizontal and then in the vertical position, to allow the opaque meal to fill up the cavity.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

A MEETING of this Society was held on Nov. 18th, when Dr. E. H. SNELL (M.O.H., Coventry) took the chair in the absence of the President, Dr. J. WHEATLEY. Dr. JOHN BUCHAN (M.O.H., Bradford) opened a discussion on

HEALTH ASPECTS OF THE FACTORIES BILL.

He said that factory legislation, which had had a great influence for good on the people of England, began 125 years ago, thus preceding by many years legislation dealing with health and education. The Factory Acts were administered by a department in Whitehall which

had little other relationship with either health or education. The present Factories Bill was a consolidating measure; it marked but few fresh developments in such legislation, and Dr. Buchan found it difficult to see why it was supposed again to stand in need of such consolidation, this being the third attempt since 1878. His criticism, he said, would bear upon some of the minor points of the Bill. It used one term to denote both factories and workshops, but the definition raised administrative difficulties. The effect of the change would be to lay the responsibility for the administration of workshops on the Factories Department of the Home Office, and he thought this was unlikely to mean increased efficiency or economy. The last report of the Factories Department showed that in 145,000 factories the factory inspectors dealt with 19,000 cases of sanitation, whereas in 128,000 registered workshops the district councils dealt with over 40,000 matters of sanitation and cleanliness. It was provided that the Home Secretary could delegate some of the duties, but he was not paramount, and district councils, as a whole, could not be said to have any great love for duties which he had delegated to them. If those councils were required to do the work it should be part of the Bill and come as a decision of Parliament. He had wondered what had occurred in the last 50 years to cause the Government to revert to the position before 1878, but he found that the Factories Department, in dealing with sanitation, often reported what difficulties they encountered in getting defective sanitary accommodation rectified. But the Secretary of State could not delegate to councils the lighting of workshops. To make this new Act a workable one, much was left to the common sense of the medical officers of health, and Dr. Buchan believed those officers would do their best to make it a success, but he regarded it as a badly drafted measure. The powers to act in default of the district council (vide Clauses 10 and 11) could not be put into operation. A part of the new Bill which he approved was that which took power to order a medical examination of employees in particular circumstances. A very good instance was the common one in which dusty occupations were liable to set up pulmonary tuberculosis. He hoped it would be a very effective provision. It must be carried out in consultation with the Ministry of Health. As it was presented in the Bill, however, it was somewhat weak, as medical supervision could be refused by a workman, and what was allowed to be done in this respect was what the employer might consider reasonable. This would probably prove to be different from what the Home Office and the Ministry of Health deemed reasonable.

The clause concerning the lifting of weights in a factory by women and young people was well intentioned, but naturally the weight which could be comfortably lifted would vary with the individual, and this clause was in the control of factory inspectors, who would probably be slow to pass such opinions as the framers of the Bill had in mind. Clause 53 dealt with basement bakehouses, and in the new definition storage rooms were not regarded as part of the bakehouse. The definition, which Dr. Buchan considered defective, read: "Any place in which are baked bread, biscuits, or confectionery from the baking or serving of which profit is derived." Dr. Buchan considered that the clause dealing with the certification by the doctor of young persons as fit for a particular employment was a definite advance. Physically defective children could be prevented from entering factories, but he thought that some further provision was needed dealing with the after-care of such children; the factory question was for them not the only one, nor the most important. It illustrated very well the undesirability of dealing with factory services independently from other health functions. Certainly it should not be the province of the factory inspector to say that a particular child should not be allowed to work in a factory.

Lieut.-Colonel F. E. FREMANTLE, M.P., did not agree that the Bill brought in only minor changes. But at a time when industry was hard put to it to make ends meet it was scarcely to be wondered at that employers were somewhat afraid of further legislation. This went to the root of the difference between the Home Secretary, who was determined to get this Bill through if he could, and the employers of labour, who were doing what they could to prevent it. Certain points in the new Bill closely affected the health of the worker. The alterations in regard to welfare provisions were negligible, but two important omissions concerned the means at the disposal of employees for washing and for drying their clothing. It was the boys who required protection against weight-lifting, as they liked to emulate men in feats of strength. Women and girls could usually be trusted not to go beyond their comfortable capacity. With regard to hours worked, the only restrictions in this Bill concerned women and young persons of 14 to 18 years of age. The hours they worked must not exceed ten a day, or 40 a week, or not more than 12 hours must be spent daily in the factory, including meal times. Some factories allowed a ten-hour day for five days, to permit a long week-end, but Colonel Fremantle thought that nine hours should be the limit. At present, except under special circumstances, overtime for young persons was illegal, but this measure now made that permissible. The Home Secretary might, for seasonal trades or exceptional pressure, allow young persons to work 50 hours a week, but on no day must the hours exceed 11, or with meal times 12 hours daily. He thought that overtime should not bring the weekly hours worked for young persons beyond 48. Where sanitary measures were concerned he thought powers should be given to the Home Secretary only after consultation with the Ministry of Health. A provision about such consultation should be inserted in the Statute. He thought the term "medical officer" should supplant that of "doctor," as the meaning of the latter was teacher. Many workshop proprietors already appointed medical officers for purposes of their own and for the welfare of their employees; and when such a medical man could undertake the general medical duties of the factory, he got to know the people in such a way that he was best qualified to maintain the health of the workers and prevent sickness. He doubted whether the average school medical officer would be suitable for factory work, which should be a complicated piece of clinical work. A factory surgeon could not well certify people as fit or not fit without knowing a good deal about the work in question. What was required, he thought, was an inspection as intimate in the factories as into ordinary works of sanitation, and he was doubtful how far this Bill would carry that out. The Secretary of State and his Department must be helped by constant consultation with the Ministry of Health.

Dr. A. H. BYGOTT (M.O.H., West Suffolk) described the Bill as a departmental measure, and did not see why the work of the whole office should not be taken over by the Ministry of Health; it was one of the purposes for which that Ministry was constituted. He regarded the Home Office as a moribund institution. He objected to so little a cubic space provision per worker as 250 cubic feet; at least 400 cubic feet should be allowed. Heating and the drying of clothing should be included in the Bill, and no overtime should be worked by young people, except in the case of breakdowns and other matters of emergency. He did not think the ordinary medical practitioner, with no knowledge of factories and no qualification in public health, should be appointed to deal with factories officially.

Dr. CYRIL BANKS (M.O.H., Halifax) thought it would be a pity if the local authorities were deprived of the powers they now possessed for supervising the conditions under which people worked; they had a good deal of influence with mill-owners in getting them to do necessary things. Factory inspectors were not by any means always reasonable in their demands.

Dr. STELLA CHURCHILL (London County Council) doubted whether the present number of factory inspectors was adequate, and thought that the conditions of work for young people in offices should be

included in the Bill. No person under 18 years of age should be allowed to work as many as 48 hours a week. Was there anything in the Bill to stop dwelling-houses being used for factories? If employers appointed their own medical officers she thought that the latter would not feel free to say what they thought.

The CHAIRMAN said he lived in a town which bristled with factories, and yet all they had was one-tenth of one factory surgeon devoted to those factories. What could he do in that time? It was a mere side-show. Medical officers were wanted inside factories and workshops to study the conditions of work, in connexion with both employees and employed.

Dr. BUCHAN briefly replied.

ROYAL SOCIETY OF ARTS.

AT a meeting of this Society on the evening of Wednesday, Nov. 16th, at which Lord DAWSON OF PENN occupied the chair, Dr. LEONARD HILL, F.R.S., delivered an address entitled

Overcrowding in Public Conveyances.

Governed by traditional fear of catching cold, he said, travellers demanded closed and heated cars, and shunned the invigorating blow and exposure to sunlight that they should have to keep them in health. Man was naturally resistant to cold, and had very little trouble in adapting himself to it; when he did so he was free from infection and dust, and enjoyed the stimulation of his heat-producing mechanism and of his whole system. The magical effects of open-air schools on weakly children were well known. Wind blowing on the face put the mucous membrane of the nose and throat in the best condition for resisting infection, but a cold floor and warm stagnant air caused it to swell and become congested and covered with thick secretion; it was then vulnerable to infection. Persons whose membranes were habitually in this state bred germs and enhanced their virulence. Since the body's defence against infection depended largely on the rate of evaporation from the membranes of the nose, throat, bronchi, and conjunctivæ, a supply of cool fresh air was very important. The more the heat loss from these surfaces, the greater the compensating flow of blood, and the greater the secretion of cleansing lymph. This loss might be four times as much out of doors as indoors. Prof. Hill had introduced a "kata-thermometer" to measure the rate of cooling from body temperature in a given atmosphere, and had measured with it the hygienic conditions in various public conveyances. In a fresh, warm room the cooling power was about 6 dry-bulb and 18 wet; in a stuffy room, 4 and 14 respectively. In a cool, fresh room, like a sanatorium ward, the readings might be 10 and 25. Out of doors the dry "kata" gave a figure of about 10 on a summer day, 20 in a cool breeze, and 40 in a cold winter wind. A cooling-power of 14 dry was required to increase the heat production of the body when resting in ordinary clothing. The cooling power of the atmosphere of a compartment in a steam train varied, according to season, position of passenger, and aperture of windows, from 5 to 18½. Inside a bus in October it might be 9, in a tram in August it might be as low as 4, and the reading in a North London electric train was 4 in August, and 7 in October. Tube trains showed a cooling power of 5–8 in August, and 7–16 in October. The ventilation of trains should be improved by the fitting of exhaust fans, to run when the train was stationary, and the heating should be applied to the floor itself and reduced in intensity. Fog was responsible for overcrowding, delay, and faulty ventilation alike, all of which made for ill-health. Some of the crowding in trains might be reduced by abolishing classes. The danger to health in crowded vehicles was not in chemical pollution, which was obvious and distressing, but in the sharp rise in the degree of bacterial pollution. The organisms might be those of catarrh only, or of any of the exanthemata, of diphtheria or tuberculosis, or poliomyelitis, or encephalitis lethargica.

Air Pollution in Tubes.

Dr. GRAHAM FORBES gave a summary of the results of an investigation conducted by him in 1920 on the air of the tube railways. 20 per cent. of the organisms belonged to varieties which grew in the throat. Tube air did not greatly encourage the development of organisms which grew at room temperature; its pollution ratio with the outside air was between 11·7 and 15·7 to ten. It contained, however, from 2½ to 5½ times as many of the organisms which grew at body temperature—the more important class for public health. These figures included the old South London railway. The bacterial content increased rapidly with the passenger rate, but the increase stopped at a certain point of overcrowding, possibly because of the resulting stagnation of the air. Humidity was a factor very favourable to bacterial survival. Chemical investigations, not yet published, showed that the carbon dioxide content was still higher than the 1902 standard, and that an excess of this gas was associated with humidity and bacterial pollution. The chemical pollution in the tubes had been found greater than in most public vehicles above ground, but less than in some places of entertainment.

Lord DAWSON entered a plea for older people, who were less able than young ones to stand fresh air in large quantities when they were fatigued.

Mr. FRANK PICK, general manager of the London General Omnibus Company, said that as long as passengers had been left to provide their own ventilation there had been constant disputes; buses were now fitted with an unclosable set of louvres behind the driver's seat, and the side windows could be opened if necessary. In compensation for the covering in of the tops, sliding windows had been fitted which allowed a good draught; these were also being fitted to the insides of buses.

MANCHESTER MEDICAL SOCIETY.

AT a meeting of this Society held on Nov. 2nd, Dr. J. GRAY CLEGG, the President, took the chair, and Dr. N. KLETZ and Mr. A. H. BURGESS opened a discussion on

Chronic Gastric and Duodenal Ulcer.

Dr. KLETZ said that the one ætiological factor which seemed to be approved by experience was infection—i.e., by septic material carried from foci of latent infection and primary emboli in end-arteries of the stomach or duodenum. It was important to go on seeking for the causes, since in the absence of such knowledge both medical and surgical treatment were liable to fail, because the cause remained operative and was consequently liable to reproduce the lesion. Clinical diagnosis both of gastric and duodenal ulcer was difficult. Diagnosis meant not merely recognition of the presence of an ulcer but also of its size, extent, locality, and relation to surrounding points and, if possible, of its chronicity. Pain was the chief symptom, and its regular rhythmical occurrence was regarded as indicative of ulcer and even, according to the type of rhythm, as showing the position of the ulcer, whether gastric or duodenal. These deductions were unwarranted. Gastric pain—i.e., pure visceral pain—was either "delayed" or "immediate." It arose not in the ulcer itself, but as a result of hypertonus or abnormal tension of the gastric musculature. Either type of pain might be associated with ulcer but could equally well be evoked by stimuli from distant organs, such as the gall-bladder and appendix, acting on the stomach through reflex nervous mechanisms. Fullness might have the same significance as pain, and the absence of pain did not prove that no organic gastric or duodenal lesion was present. Somatic signs, when definitely localised and clear-cut, were of grea

value. Dr. Kletz drew attention to the importance of complete investigation by radiography, fractional gastric analysis, and examination of stools for occult blood. Each of these must be correlated with a careful clinical history and a thorough physical examination. Treatment was by no means necessarily surgical. The first step should always be to seek for any focus of infection and it was especially important to examine the accessory nasal sinuses and teeth by X rays. Operative treatment should always be undertaken: (1) where there was any organic obstruction or hour-glass deformity; (2) where there was relapse after adequate medical treatment; (3) in cases of penetrating ulcer; (4) in cases of recurrent hæmorrhage; (5) when the ulcers were extremely chronic and indurated; and (6) in unfavourable economic or social conditions. Other cases should be treated medically. Failure to reduce acidity might follow gastro-enterostomy and lead to recurrence of symptoms or even to jejunal ulcer, and adequate dietetic and medical control was essential after operation.

Mr. A. H. BURGESS said that from the published figures duodenal ulcer appeared to be much commoner than gastric ulcer in the North of England, whereas in London gastric ulcer was more common than duodenal. Coincidence of gastric and duodenal ulcer was frequent. D. P. D. Wilkie,[1] in an analysis of 300 operations, had found that in 16 per cent. of all duodenal ulcers there was a gastric ulcer, and that in 53 per cent. of patients with gastric ulcer one or more duodenal ulcers were present. Rosenow had isolated streptococci from the teeth and tonsils of patients with peptic ulcers, and also from ulcers removed by operation, and by intravenous injection of these streptococci into animals had produced ulcers in their stomachs similar to those in man. From these ulcers streptococci had again been isolated, and had produced similar ulcers on intravenous reinjection. These researches, said Mr. Burgess, emphasised the importance of a careful search for any focus of infection in the teeth, tonsils, nasal sinuses, or elsewhere before operation, and in the appendix and gall-bladder during operations. He considered that the supervention of carcinoma upon gastric ulcer did not occur in more than from 5 to 10 per cent. of cases. The chronic ulcer arose as an acute ulcer or erosion: most erosions of this kind healed under medical treatment and only a small proportion become chronic. Medical treatment should therefore be adopted in the early stages, and surgical treatment should be considered only when it failed to relieve the symptoms, or when they repeatedly recurred. Complications such as hæmorrhage, obstruction, and subacute or chronic perforation, were indications for surgery, and operation should be seriously considered where radiological examination showed a definite ulcer crater or marked deformity of the stomach or of the duodenal cap.

Gastro-enterostomy for chronic ulcer of the stomach had first been performed by Doyen in 1892, and for duodenal ulcer by Codivalla in 1893, and for many years it had been the only operation employed in these cases. It had soon become apparent that its results, both immediate and remote, were much better in duodenal than in gastric ulcer. Excision of the gastric ulcer with gastro-enterostomy had been tried, but was soon abandoned, since recurring ulcer and even perforation sometimes followed. It had now come to be recognised that so far as the surgical treatment of gastric ulcer was concerned there were two essentials: (1) removal of the ulcer itself, either by excision or by the cautery (Balfour); and (2) the performance of gastro-enterostomy, or at any rate, of some other operation by which the bile and pancreatic juice was allowed to enter the stomach freely and so diminish the tendency to hyperacidity. If hyperacidity persisted after gastro-enterostomy then a secondary (anastomotic) ulcer was more likely to follow. The two essential procedures could be carried out either separately, as when excision or cautery-destruction was combined with gastro-enterostomy, or could be combined in the single operation of partial gastrectomy, often technically easier. The objection to partial gastrectomy was that it involved the sacrifice of a large amount of healthy stomach, often many times greater than the actual ulcer; though usually this did not appear to cause any ill-effect, yet several cases of pernicious anæmia had been reported following partial gastrectomy. The most difficult cases were those in which the ulcer was on the lesser curvature, high up, near the cardiac orifice. In such a case the partial gastrectomy would involve the loss of almost the whole stomach and local excision combined with gastro-enterostomy, if at all possible, was a better operation. Jejunostomy had sometimes to be performed in these cases, absolute rest being given to the stomach for many months, but relapses might occur when oral feeding was recommenced. L. R. Braithwaite[2] advocated in such cases the operation of cholecystogastrostomy ("gastric bilification") which had previously been suggested by Babcock.

In duodenal ulcer gastro-enterostomy gave good results in from 85 to 90 per cent. of cases, and combined with the removal of the ulcer by excision or cautery, appeared to be the procedure of choice. The "fly in the ointment" was the occasional supervention of jejunal or gastro-jejunal (anastomotic) ulcer. The estimated frequency of this unfortunate complication varied according to different writers. Balfour found that it occurred in 1·6 per cent. of gastro-enterostomies performed at the Mayo Clinic, whilst Lewisohn, of Mount Sinai Hospital, New York, found that 34 per cent. of 68 cases re-examined four to nine years after gastro-enterostomy showed gastro-jejunal ulcer. To avoid this complication surgeons had worked along two lines; some confined themselves to operations on the pyloric region, such as pyloroplasty and its many modifications, Finney's operation, or gastro-duodenostomy, whilst others radically excised a segment of the duodenum, sometimes combining this with extensive resection of the pyloric portion of the stomach (Pannett, von Haberer, Finsterer). One of the main objects of extensive resection was to produce marked lowering of the gastric acidity, but secondary ulceration had been known to follow all these operations. Of 100 cases of gastro-jejunal ulcer operated upon at the Mayo Clinic, and analysed by Balfour,[3] 20 per cent. were associated with anacidity, so that anacidity after gastro-enterostomy was not a certain protection against gastro-jejunal ulcer.

[1] Brit. Med. Jour., 1926, ii., 469.

EDINBURGH OBSTETRICAL SOCIETY.

Reduction of Maternal Mortality.

IN the course of a valedictory address on Nov. 9th, the retiring President, Prof. R. W. JOHNSTONE, discussed the means of reducing maternal mortality. At present, he said, not more than about 9 per cent. of mothers in Scotland attended antenatal centres; if this number could be increased to 90 per cent. the maternal mortality question would cease to be a burning one. As regards intranatal care the first general principle to be borne in mind was that in the absence of complications a natural unassisted labour was always more favourable to both mother and child than an instrumental one. The pendulum had swung too far in the direction of instrumental interference. Antenatal examination enabled cases in which any difficulty was likely to be encountered during labour to be separated from those in which labour was likely to be normal. If all the cases in the latter category were allowed to remain normal

[2] THE LANCET, 1926, i., 900.
[3] Annals of Surgery, 1926, lxxxiv., 271.

by being permitted to take their course except in the presence of true obstetrical indications, the effect would be a far-reaching improvement in results. Discussing the advisability of handing such normal cases in larger number over to the care of competent chosen midwives, he contrasted this plan with the alternative scheme for an official maternity service such as had been advocated by some obstetric teachers. He was of opinion that such a service would lead to midwifery becoming purely a specialty and he contemplated any such outcome with reluctance. He thought that the available beds for maternity cases ought to be greatly increased, not only in large centres but in country districts, and that in the latter at any rate patients might be encouraged to enter hospital and be there attended by their own doctors. This would tend to raise the standard of midwifery practice throughout the country without actually making midwifery an exclusive specialty. In industrial class practice, he said, midwifery was inadequately paid, and until the remuneration was better it could not be hoped that the standard of obstetric practice would be raised very much. The time given to the clinical study of midwifery in the curriculum should be greater, for it was absurd that the study of a vital subject like practical midwifery should have the same period allocated to it as to diseases of the skin and other minor specialties.

Reviews and Notices of Books.

GONOCOCCAL INFECTION IN THE MALE.

By ABR. L. WOLBARST, M.D., Urologist and Director of Urologic Clinics, Beth Israel Hospital. London: Henry Kimpton. 1927. Pp. 237. With 82 illustrations and 7 plates. 25*s*.

Dr. Wolbarst considers that a book on this subject is called for because there has recently been "a considerable advance in our knowledge of the treatment of male gonorrhœa and its complications." Whilst welcoming his treatise we do not agree that there has been much progress during the last decade. It is true that during and after the war many new methods were introduced, involving the use of new instruments and the application of electrolysis, diathermy, and cauteries; but as a result the mucous membrane of the urethra has often been subjected to trauma which has had effects more distressing than those of the gonococcal infection itself. The over-treatment of ten years ago is, therefore, giving place to the laissez-faire policy of pre-war days, and with the exception of diathermy hardly any method of treatment is now in common use which was not then employed.

Dr. Wolbarst, however, considers that advance has been made in physical therapy, intravenous and local medication, protein therapy, and, most important of all, by Belfield's method of washing out the seminal vesicles through the vasa. In his personal experience "covering several hundred cases, this operation has proved of inestimable value," and is the "ideal method of treatment in the average case of vesiculitis." Dr. Wolbarst employs diathermy not only in the treatment of such complications as epididymitis, arthritis, prostatitis, and vesiculitis, but also in cases of uncomplicated anterior infection. For this application to the anterior urethra he uses a straight electrode inserted down to the bulb, or in some cases electrodes applied externally to the lateral walls of the penis like a splint. His results in localised anterior urethritis seem to be as good as those obtained in this country in the treatment of prostatitis and epididymitis. The final chapter of the book is contributed by Mr. J. E. R. McDonagh, whose views are stimulating, though for the most part cannot be understood without reference to his previous publications. The treatment of gonorrhœa has, however, proved such a stone wall that an original thinker ought to be encouraged rather than discredited on the score that his statements are unproven.

Taken as a whole Dr. Wolbarst's book is the clearest and the most complete work that has yet appeared on modern methods of treatment in gonorrhœa.

PNEUMOTHORAX AND SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

Second edition. By CLIVE RIVIERE, M.D. Lond., F.R.C.P., Physician, City of London Hospital for Diseases of the Heart and Lungs, and East London Hospital for Children. London: Humphrey Milford, Oxford University Press. 1927. Pp. 311. 10*s*. 6*d*.

THE second edition of Dr. Riviere's book is in several respects an improvement on the first, published ten years ago. During this interval there has been no revolutionary change in pneumothorax treatment; its technique has been perfected, and its popularity has been further established. But important advances have been made in the surgical treatment of pulmonary tuberculosis, and this is why the author has advisedly included in the second edition several chapters on this subject. In Part I. the original 14 chapters have grown into 19, and much new material has been provided in connexion with such important problems as the reduction of adherent pleura and the duration of the treatment.

Dealing in Part II. with the surgical treatment of pulmonary tuberculosis, the author has wisely avoided operative details and technique. He gives an account of the underlying principles of the various operations, and of their prospects of success as judged by the available statistics. In this way he enables the busy practitioner to form an estimate of the value of these operations. In the case of pneumothorax treatment a certain amount of experimentation is often justifiable, for if the treatment is a failure it can easily be discontinued without the patient suffering much from the attempt. But the surgical operations entail pain and discomfort and leave little room for a tactical retreat; infinite caution and a wide experience are necessary if the patient is to be fairly treated. Discussing the results of the surgical treatment of pulmonary tuberculosis, the author writes: "In gauging their value it is well to remember that they represent the work of those surgeons most highly skilled in this branch of work . . . ." Practitioners responsible for the choice of a surgeon will insist on choosing one who has successfully mastered this highly technical subject.

HYGIENE AND SANITATION.

By JESSE FEIRING WILLIAMS, M.D., Professor of Physical Education, Teachers' College, Columbia University. London and Philadelphia: W. B. Saunders Company. 1927. Pp. 344. 10*s*.

THIS book is intended to present to the beginner the fundamentals of hygiene and sanitation, and is well adapted to that end. It opens with a brief elementary review of the history of health care in modern times, and lays commendable stress on the need for a clear understanding of the descriptive terms in common use. Subsequent chapters are devoted to personal hygiene; the care of expectant mothers, of children, and of the aged and infirm; the dual rôle of hygiene and sanitation in the prevention of disease; lighting, heating, and ventilation in relation to the home and the factory; and national and international organisations for preserving and promoting the health of the people. Lists of books for collateral reading are supplied, and questions at the end of each chapter, which will be useful to teachers. We notice that measles is included among the diseases spread by milk, a mode of transmission which has not, so far as we know, been substantiated. A statement on p. 19, also, might give the impression that Jenner lived and worked subsequently to Chadwick and Simon. Such small defects hardly detract from the value of a very useful little book.

SURGERY OF THE EYE AND ITS APPENDAGES.

Chirurgie de l'Oeil et de ses Annexes. Third edition. By F. TERRIEN, Professeur de Clinique Ophtalmologique à la Faculté de Médicine de Paris. Paris: Masson et Cie. 1927. Pp. 646. Fr.100.

THE number of excellent text-books of operative surgery of the eye which have been published of late years by English, French, American, and German writers makes the choice between them somewhat embarrassing. English readers, besides Grimsdale and Brewerton's text-book, have access in their own tongue to Torok and Grout's work, and to Dr. Sweet's translation of Meller. For French-reading students Terrien's work, enlarged and revised in this edition, competes on equal terms with that of Duverger and Velter, which appeared last year. Terrien's book is more complete, describing not only the common operations, but a large number that are very seldom performed, including some which are not even recommended by the author. Thus, owing to the importance of the subject, the operations for intracapsular extraction of cataract, both that of Smith and that of Barraquer, are described in some detail, but the author recommends them only in very exceptional circumstances. It would be difficult to include all the operations that have been proposed for glaucoma, but the majority of them are described. The same applies to lid operations. The descriptions themselves are adequate, and are greatly assisted by the very large number of figures illustrating the text. These figures are not ambitious—there are no coloured plates, for instance—but they are clear, and serve their purpose admirably. Only here and there could we wish for more copious illustration, as, for instance, in the description of excision of the lacrymal sac. Perhaps the operation is not so popular in France as it is here. A greater space and far more copious illustration is accorded to the operations which provide drainage for the sac through an enlarged opening into the nose.

This book is comprehensive in most respects, and both as a work of reference and a guide to intricate procedure will be found of great value. Only as regards the newer methods of plastic surgery of the lids and socket that have been devised since the war is a reader unlikely to find what he wants.

PRACTICAL NURSING.

Including Hygiene and Dietetics. Seventh edition. By the late HERBERT E. CUFF, M.D., F.R.C.S., Principal Medical Officer to the Metropolitan Asylums Board, London. Rewritten and enlarged by W. T. GORDON PUGH, M.D., B.S., Medical Superintendent, Queen Mary's Hospital for Children, Carshalton. London and Edinburgh: William Blackwood and Sons, Ltd. 1927. Pp. 754. 10*s.* 6*d.*

IN this edition many changes have been made to meet the requirements of the examinations for nurses instituted since the previous edition was published. The new matter is chiefly in the sections dealing with dietetics, ward work and hospital administration, insulin treatment, diseases of children, and the use of ultra-violet light and X rays. Over 150 illustrations have been added. A special feature is the inclusion in the appendix of the questions, except those in anatomy and physiology, which have hitherto been set at the written examinations of the General Nursing Council of England and Wales. References are given after each question to those pages on which the appropriate answer is to be found.

The book is simply and clearly written, and besides giving all the essential facts which a nurse is likely to require, contains enough medical and surgical details to enable her to understand the dangers of each disease and the aims of treatment. She may then do her part with some knowledge of the principles being followed by the doctor in charge. In some places the duties of the nurse, apart from those of the doctor, do not stand out in sufficient relief. For example, in the paragraph on the nursing and treatment of pneumonia, although stimulants and bleeding are discussed, no mention is made of the great importance of frequent cleansing of the nose and mouth in preventing nose and throat complications. The sections on hygiene, bacteriology, and dietetics are simple and clear, and contain enough of the groundwork of these subjects to help a nurse in her practical work.

The book contains all that a nurse need know in order to pass her examinations, and much besides that is relevant. Dr. Pugh is to be congratulated on condensing so much into a handy volume, and on the excellent index provided.

THE SKIN: ITS CARE AND TREATMENT.

By ALBERT STRICKLER, M.D., Professor of Dermatology and Syphilis, Temple University Medical School. London and New York: Appleton and Co. 1927. Pp. 194. 5*s.*

THIS small volume can be described as a household treatise, since its contents can be readily understood by any adult layman. The author, who is well known on both sides of the Atlantic as an expert dermatologist, has done well to emphasise the importance of prevention, and no detail in the daily skin toilet has seemed to him too trivial for mention. Bathing and washing, the value and misuse of soaps, their relative causticity, the question of "hard" water, rules for diet, the special treatment of infants—all these and many other subjects are discussed in the simplest terms. A good deal of space is devoted to the prevention and treatment of acne in the adolescent, pityriasis of the scalp and its possible sequelæ, and such common ailments as chilblains, sunburn, urticaria, rosacea, and warts. It is interesting to observe that Prof. Strickler does not offer any wholesale condemnation of the use of cosmetics, which have gained an apparently unassailable hold on the women of to-day. He discusses them rationally and indicates some of the more obvious fallacies and dangers. This section is one of the most original in the book, and should exert a healthy influence over some of the many victims of unscrupulous beauty specialists. The low price of publication doubtless accounts for the absence of illustrations and diagrams; nor need this be deplored, for Prof. Strickler's object is to educate the public, not to teach them dermatology. His book is probably the best of its kind from American sources.

RECENT ADVANCES IN ANATOMY.

By H. WOOLLARD, M.D., Elder Professor of Anatomy, University of Adelaide; late Assistant Professor of Anatomy, University College, London. London: J. and A. Churchill. 1927. Pp. 302. 12*s.* 6*d.*

AN anatomist of the latter part of last century, seeing a book which deals with such subjects as the different sorts of sensations, or central retinal projection, or the origin of the cerebro-spinal fluid, might consider it a physiological work. It is not so to-day. Physiology looks at the structure of the body from the viewpoint of function, while anatomy considers function from the standpoint of structure, and there was, at one time, a marked tendency in each camp to forget what it was looking at in the excitement of discovering new methods of observation. Recent years, however, have seen a more reasonable outlook and, consequently, a nearer approach to each other of the two fundamental medical disciplines. Anatomists in particular, dissatisfied with the functional ideas offered to them, have been pushing their inquiries beyond the dissecting-room, into the laboratories and experimental theatres, and gaining new notions about the structures with which they deal. While much still remains to be done in the middle of the anatomical field, its boundaries are now widened to such an extent that it is difficult for those who are actively working in some particular portion of it to keep in touch with all the activities going on elsewhere.

Prof. Woollard's little volume is, therefore, very welcome. It does not profess to deal with all the studies which are included under the usefully comprehensive term "anatomy," for this would hardly be possible, but it gives a good idea of certain modern work. Beginning with an interesting account of Prof. Chambers's new art of microdissection, the author goes on to a consideration of some aspects of tissue culture; subsequent subjects, in addition to those mentioned in our first sentence, include ovulation, the Miller ovum, growth centres and organisers, morphogenesis of nerve-fibres, vital staining, origin of blood cells, postural organs, the red nucleus, extrapyramidal system, cerebellum, and X ray anatomy—a good set of important matters, each chapter having a reference list of cited literature. Much of the work has been done in America, where a happy combination of enthusiasm and capital has opened up great possibilities. It is well that all these views should be put before us, although it remains to be seen whether some of them will stand the test of time and further research. There is much information in this book which will, we think, be new even to some anatomists, and its success is certain. In the next issue the author might look to his Latin grammar. The book is of handy size, well printed, and clearly illustrated, and a good member of an excellent series.

HYPOTENSION.

By ALFRED FRIEDLANDER, Professor of Medicine, University of Cincinnatti. London: Baillière, Tindall and Cox. 1927. Pp. 193. 13*s.* 6*d.*

THIS book is a reprint of an excellent article which appeared in an American medical journal and has already been the subject of comment in our pages (THE LANCET, August 13th, p. 345). Prof. Friedlander deals in succession with all the conditions in which a lowered blood pressure reading may be obtained, and with the various tissue extracts and other substances known to have a hypotensive action. His useful monograph should find many readers.

THE ELECTROPHONOÏD METHOD OF ZÜND-BURGUET.

By MACLEOD YEARSLEY, F.R.C.S. London: William Heinemann. 1927. Pp. 108. 5*s.*

THIS small book constitutes a manual of Dr. Adolphe Zünd-Burguet's method for the treatment of chronic deafness by auditory re-education, and it has been read by Dr. Zünd-Burguet who, in a modest foreword, suggests that the originality of scientific work "consists as much in the strictly correct interpretation of known facts as in the presentation of personal discoveries," the words being equally applicable to himself or Mr. Macleod Yearsley.

In a brief résumé of the methods employed during the past 100 years in the treatment of chronic deafness, Mr. Yearsley points to Victor Urbantschitsch, of Vienna, as the real precursor of auditory re-education. His method was much discussed from the obvious point of view that the improvements related by him lacked all anatomical explanation, to which he replied some 40 years ago (much as Zünd-Burguet replies to similar criticism to-day) that the trial of his method would prove its success, and both workers consider that re-education may be found of value in nearly all deaf cases. A description of the electrophonoïd apparatus for the mechanisation of the human voice is accompanied by an explanation of the scientific principles upon which its claims are based, and is followed by a wise chapter upon the need for a scrupulously careful examination of the patient before deciding upon the advisability of applying the treatment; the chapter concludes with a model case-sheet, leaving spaces for charting the various findings under general and special history, response to tuning-fork tests, and acoumetry. The results of the practical application of the method are asserted to be pedagogic and therapeutic, the patient learning to listen, while the pathological conditions—certain of them, at any rate—are definitely ameliorated. A section dealing with the indications and contra-indications for the method suggests that all cases of deafness, not caused by a complete destruction of the organ of Corti, may be suitable for auditory re-education; and in amplification of this view Mr. Yearsley quotes Dr. G. C. Cathcart's figures, published in THE LANCET some two years ago,[1] and adduces, also, the results in a series of 41 cases under his own care.

It is well known that differences of opinion exist as to the value of Zünd-Burguet's method. But in view of the wise decision of the Otological Section of the Royal Society of Medicine to set in motion an international research into the subject of otosclerosis, this method is sure to come under review, so that Mr. Yearsley's exposition of it is timely.

LIFE ASSURANCE IN THE TROPICS.

A Pocket Guide to Medical Life Assurance. Second edition, revised and enlarged. Compiled by JEHANGIR J. CURSETJI, M.D., L.R.C.P., L.R.C.S., Chief Medical Officer, The Oriental Life Assurance Co. Bombay: At the Times Press. 1927. Pp. 92.

THE problems of life assurance in tropical countries are in some ways more difficult than those in more temperate and equable climates. Apart from the special diseases incidental to life in hot climates and the marked incidence of parasitic infections, the influence of racial habit demands close consideration. The statistical data available to medical officers of insurance companies overseas are at present less complete and perhaps less reliable than those upon which premiums for lives in this country are based. The small guide before us, which is now in its second edition, has been compiled by Dr. Cursetji to afford help in these matters. He has had a considerable experience as medical examiner in India, more especially as chief medical officer to the Oriental Life Assurance Company. His book is presented in two forms, one intended for head office use, the other for the occasional examiner. The author stresses the importance of securing full evidence of identification, since impersonation and fraud are not infrequent in India; statements in regard to age and family history are frequently found to be unreliable. On the other hand, addiction to alcoholic drinks is unusual, though other intoxicants, such as bhang, ganja, and opium are extensively consumed.

It is difficult for chief medical officers in this country to assess the question of physique in Indian applicants. The data included in tables as an appendix to this book in regard to the average height, weight, chest, and abdominal measurements of Indian assured lives should be very helpful. These tables comprise details scheduled in over 51,000 lives examined by the Oriental Government Security Life Assurance Society during the years 1914 to 1924, carefully scrutinised under the close supervision of the actuary, Mr. Douglas Forrest. There is also a table giving the expectation of life in Indian lives on the basis of the mortality experience of the same Company over a period of 39 years. These statistics comprise details in regard to Hindus in different parts of India, Mohammedans, Parsees, and Indian Christians, by far the largest number being Hindus. Considerable attention is paid to the recording of blood pressure as a part of the medical examination. Most companies now insist upon a record of blood pressure, at any rate in lives over 50; the author's clear practical description of the methods of recording the systolic and diastolic pressures should be valuable. The importance of the moral hazard in life assurance is discussed, and, although this is a question rather for the management, it is one upon which the medical examiner should be prepared to express an opinion.

Dr. Cursetji is concise and practical throughout, he has a real grasp of the special problems of insurance medicine, and his guidance will be found helpful, more especially to the occasional examiner.

[1] THE LANCET, 1925, i., 968.

THE LANCET.

LONDON, SATURDAY, NOVEMBER 26, 1927.

THE LORD CHIEF JUSTICE ON CRIME AND INSANITY.

LORD HEWART'S Lloyd Roberts lecture, delivered before the Medical Society of London on Nov. 16th, and reported at length in another column, was a characteristically lucid exposition of the strict legal view of the criminal responsibility of the insane. But nothing is more clear than that the Lord Chief Justice will take no step to reconcile the different opinions which he ascribed to the legal and medical professions. He repudiated even the slight concessions which the Atkin Committee recommended In 1922, when the trial of RONALD TRUE had given the public the impression that all was not well with the administration of justice in such cases, the Lord Chancellor appointed a Committee to consider what changes, if any, were desirable in the existing law, practice, and procedure relating to criminal trials where the defence of insanity is raised. The predominantly legal character of the Committee was unmistakable. The chairman was Lord Justice ATKIN. Besides the two law officers of the Crown, the other members were Sir HERBERT STEPHEN, with his unrivalled knowledge of trials in the assize-court, Sir RICHARD MUIR (then Senior Treasury Counsel at the Central Criminal Court), Sir ARCHIBALD BODKIN (Director of Public Prosecutions), Sir EDWARD TROUP (lately permanent Under Secretary at the Home Office, perhaps the sole member of the Committee who had never prosecuted or defended a prisoner), Sir ERNLEY BLACKWELL (the Home Office legal expert), and the late Sir EDWARD MARSHALL HALL. The Lord Chancellor having thus appealed for guidance to a body which certainly could not be accused of any bias towards the medical view, the Committee presented a unanimous report; it recommended two changes in the law, changes which fell far short of the proposals of the Medico-Psychological Association, but which coincided reasonably with the more conservative suggestions of the British Medical Association. What, however, the Lord Chancellor's Committee recommended, the Lord Chief Justice's lecture disapproves.

The Atkin Committee's main proposal for the alteration of the law was the recognition of the defence of uncontrollable impulse. "It should be recognised that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the prisoner was by mental disease in substance deprived of any power to resist." Lord HEWART will have none of this. He will allow no medical witness to say that A's impulse was uncontrollable for fear that B and C and D should relax the effort to control their own. Lord HEWART is frankly afraid of the medical witness. The crucial question at the trial would be whether the accused was acting under an irresistible impulse. "Would there be any material or guidance at all except the medical opinion which the prisoner might be fortunate enough to be able to adduce in his favour, contradicted by the medical opinion which might be offered on the part of the prosecution?" If the issue in a trial is a matter of medical testimony, why should that testimony be ignored? It is a common enough practice in a criminal court to take the evidence of the prison doctor as to a prisoner's state of mind. Is the opinion of other doctors who have made a special study of mental disease to count for nothing? The Lord Chief Justice discounts the Atkin Committee's recommendation because it named infanticide as a known example of uncontrollable impulse. The Infanticide Act, he says, has made special provision for this class of offence. But all that the Infanticide Act has done is to make it lawful to reduce the charge of child murder to some lesser offence, and, as our columns showed last week, the statute withholds even this slight measure of relief if the infant is four weeks old. The Infanticide Act can scarcely be accepted as a sufficient substitute for the Atkin Committee's recommendation that the defence of uncontrollable impulse be legally recognised. The failure to implement the Committee's main recommendation extends also to its second and minor proposal for the alteration of the law. It recommended the abolition of the meaningless verdict, "Guilty but insane." As the Committee's report pointed out, this verdict is one of acquittal; the word "guilty" in criminal trials should connote criminality only; the word "insane" indicates that the criminality was negatived by irresponsibility. On any showing, this illogical verdict should be banished from our courts; the necessary legislation is presumably denied because of the official view that no change could be a change for the better.

LABORATORY BENEFIT.

THE recent annual conference of insurance committees, held at Harrogate, agreed to press for the inclusion of expert medical advice and treatment and in particular of laboratory service as part of the medical benefit under the National Health Insurance scheme. This, it will be remembered, was one of the recommendations of the Royal Commission, and the conference expressed satisfaction at the steps already taken on their own initiative by certain insurance committees to provide for pathological investigation. It is a healthy sign of awareness on the part of insurance committees throughout the country to the needs of insured persons that these matters should have engaged the attention of the conference; but the fact that schemes, such as that recently introduced in Lancashire, are being promulgated by individual committees is not without its drawbacks and dangers. In a service such as national health insurance it is desirable for the machinery to be standardised. Local differences in practice must lead to increased complexity of administration and consequent unnecessary labour. That was fully recognised by the council of the National Association of Insurance Committees, which, while taking cognisance of sporadic arrangements, insists that nothing short of a laboratory service established upon a national basis can be a satisfactory complement to the national medical service.

The only laboratory activity at present recognised by the health insurance system is the manufacture of vaccines. A panel practitioner may send a patient to a pathologist for a vaccine and for the preparation of this a reasonable payment will be made; no funds, however, are provided for the performance of any investigations directed towards ascertaining whether a vaccine or some alternative line of treatment is desirable. The pathological laboratory has of late years become so

essential an instrument of diagnosis that it is not surprising that efforts have been made in many parts of the country to remedy the shortcomings of the health insurance system in this respect. A simple and obvious expedient is for the practitioner who requires the aid of a laboratory in the diagnosis of his patient to send the said patient to a pathologist ostensibly for the preparation of a vaccine, but actually that the pathologist may make such investigations as may be necessary, the pathologist on his part charging a fee ostensibly for the preparation of a vaccine, but actually for the examinations performed. This subterfuge can hardly be regarded as satisfactory, but it is the line of least resistance for the active and intelligent practitioner in many parts of the country. Somewhat less surreptitious arrangements, inaugurated at the instance of various insurance committees, have been arrived at in certain parts of the country. Of these arrangements there are three general forms of which typical examples are in force in Lancashire, Cheshire and Flintshire, and the West Riding of Yorkshire.

(1) Under the Lancashire scheme the Wigan Royal Infirmary has agreed in consideration of a payment by the insurance committee of £500 to supply outfits for the collection and transmission of pathological specimens to all panel practitioners in the area of the committee and to perform all pathological investigations for insured persons in the area without further charge. (2) The Cheshire and Flintshire committees have an arrangement with the Chester Royal Infirmary by which the latter undertakes to perform pathological investigations for insured persons at a reduced rate; a similar scheme is in existence in Wolverhampton where it was inaugurated by the Wolverhampton and Staffordshire General Hospital. In this type of scheme the doctor sending in material assumes responsibility for the payment of the fee, which he may or may not recover from the patient. (3) In the West Riding of Yorkshire a scheme was inaugurated some years ago by which the county council laboratory offered to provide reports of pathological material for insured persons, free of any charge, in addition to the service specifically provided out of the public funds.

Of these three systems the first two involve arrangements between the insurance committees and those hospitals to which the patient will probably be admitted if in need of hospital treatment. This coöperation between the general hospitals and the insurance service offers obvious advantages, one of the greatest of which is the provision of a steady flow of paid work which would enable many voluntary hospitals, not now able to do so, to maintain a pathological department, and would assist those which already have them to increase their efficiency. Such departments are expensive to run and demand expert direction, which must be paid for. It is probable that few measures would tend more to raise the standard of all our medicine than the establishment of a network of pathological departments in connexion with the voluntary general hospitals. Many such, of course, exist at the present day; they serve as rallying points for the medical activity of their neighbourhood in so far as investigation and research are concerned. Elsewhere the newly settled practitioner too often finds himself cut off from the facilities for clinical investigation which he enjoyed in his teaching hospital, and his work is accordingly hampered. Few practitioners are out of reach of a general hospital, but many of these are without adequate pathological departments; this is a state of affairs which is being remedied as rapidly as possible in the circumstances, but it would be even more readily remedied could the governing bodies of voluntary hospitals be assured of a steady, even though small, income for their pathological departments when established. The system inaugurated in the West Riding appears to involve the use of public money for a purpose for which it is not specifically provided, and, if it became general, would lead to the locking up of a large amount of clinical data where they could be of no further use. Commendable as they are, the Lancashire and Cheshire and Flintshire schemes are in some respects open to grave criticism. As regards the former the difficulties of estimating the lump sum which shall represent an adequate repayment for work performed are obvious; as regards the latter the fees charged to insured persons must in the nature of things, so long as no financial responsibility is assumed by the insurance committee concerned, afford no adequate remuneration to the hospital undertaking the work. There is no dissentience as to the need of a pathological service for insured persons; there is grave danger that if the decision is much longer deferred disturbing differences in local practice in its provision may grow up. The time would appear to be ripe for concerted action.

MEDICAL WORK OF THE MINISTRY OF PENSIONS.

ON Saturday last, at the annual dinner of the Sussex Medico-Chirurgical Society, the Minister of Pensions, Major G. C. TRYON, spoke interestingly upon the urgent need for accurate medical knowledge that had been revealed in the course of the work of the Ministry. All who know how extensive and valuable that work has been, and still is, will endorse his statement that even amongst doctors there are too few who realise either its amount or the difficulty of the circumstances in which it has been done. How often, for example, that work has been of a pioneer nature, because the results of war were outside the ordinary experiences of either civilian or doctor. An example given by Major TRYON to illustrate the prevision of his department was a particularly apposite one, for he pointed out that, long before the recent Royal Commission on Lunacy made its report, the Ministry of Pensions had established hospitals for borderland cases; while as an example of promptness in the employment of medical discovery we are reminded that the Ministry set aside special wards for the effective treatment of diabetes as soon as the properties of insulin became known.

The first duty of the Ministry of Pensions, when it came into existence, was to investigate and decide the exact nature of the disability of any applicant—the extent to which that disability affected the life of the subject, for on this must depend the just assessment of compensation. The problems that thus presented themselves before the medical boards, which were established promptly throughout the country were not easy, for in many directions there were no scientific precedents upon which decisions could be based. And the terms, "entitlement" and "assessment," were themselves novel, so that the boards were dealing, in their early days, with conditions where accepted knowledge proved no general guide, and were expected to conform in their judgments with an unfamiliar scheme of categorisation. Further uniformity of procedure had to be ensured throughout the country. This was guaranteed by the coöperation on the boards of whole-time medical officers, specialists, and general medical practitioners, so making up an average of medical opinion, and that the average was capable of even-handed justice in

rendering its verdict is proved by the emergence of the boards with credit from considerable hostile criticism—criticism that was natural, no doubt, because of the sad quality of the instances of hardship under discussion, but which was none the less usually unwarranted.

Following "entitlement" and "assessment" came treatment when the needs of the Ministry were notoriously greater than could be met by the hospitals of the country, civil and military, so that the Ministry was compelled to establish a network of hospitals and clinics throughout the country for the orderly development of this work. Major TRYON said: "As the number of cases requiring treatment diminished, it became possible to concentrate cases of similar character in a few specially equipped institutions—e.g., cases of dysentery and other tropical diseases; paraplegics and epileptics. The miscellaneous category of war neurosis resolved itself as time went on into the definitely insane, the borderline case, the true neurasthenic, and the mentally defective. For all these classes special arrangements were made. For the insane the Ministry established a close liaison with the Board of Control and eventually arranged for the allocation of separate wings in two large mental hospitals for the treatment of those pensioners whose mental state permitted them to appreciate the special accommodation provided. In addition, patients discharged on trial are specially accommodated for a time in Ministry hospitals, so as to minimise the difficulties of sudden transfer from asylums to civil life." The Minister's summary in no way exhausts the story of combined and individual effort undertaken for the treatment of pensioners. The Royal Colleges, the Medical Research Council, and many distinguished clinicians have been engaged throughout in advising and collaborating with the Ministry, and the need remains for a continuance of their labours. According to the estimate of the Ministry of Pensions 3750 beds are still required in the hospitals of the Ministry, while 5250 out-patients are under its care. There is no room for relaxation of activity, but the results achieved give good promise for the future.

ELIZABETH GARRETT ANDERSON HOSPITAL.—Over £5000 was subscribed at a dinner in London last week in aid of the fund for the extension of this hospital.

BIRMINGHAM HOSPITALS.—The new surgical block of 120 beds which has been added at a cost of £100,000 to the Queen's Hospital was opened last week by the president, Sir Charles Hyde, Bart. The additional accommodation consists of three large operating theatres, six wards, two sterilising rooms, three anæsthetic chambers, and concomitant apartments. The walls of two of the theatres are covered with grey opaque glass; in the third the glass is mottled green. The board have had to realise the whole of the hospital's available investments, but a further £15,000 is needed to cover the capital expenditure, while the additions involve an increased annual outlay of £15,500.—The report of the Hospitals Committee of the Birmingham Board of Guardians emphasises the heavy increase that has taken place in the work of the Dudley-road and Selly Oak Hospitals. In-patients have grown by more than 3000 to 20,989. At Dudley-road the out-patients have nearly doubled; at Selly Oak they have exactly doubled. These figures eclipse all previous records—indeed, Dr. F. W. Ellis, the chief medical officer, states that the continued increase during the last seven years "probably creates a record for any hospital administration in the country." Major R. Wrey, assistant to the treasurer of the Royal Berkshire Hospital and organiser of the contributory scheme of that institution and the associated hospitals, has been appointed organising secretary of the Birmingham contributory scheme which comes into operation on Jan. 1st.

Annotations.

"No quid nimis."

A YEAR OF CANCER RESEARCH.

IN the twenty-fifth annual report of the Imperial Cancer Research Fund Dr. J. A. Murray presents a brief résumé of a year's work at the laboratories of the Fund which he directs. Tumour material from these laboratories has as usual been supplied to assist investigators all over Europe, some of whom have responded with a similar courtesy. Ten papers by members of the staff have appeared in scientific journals, amongst them the Linacre lecture on Multiple New Growths, which we printed last month. Dr. Murray specially notes an effort made to meet the complaint frequently launched against laboratory workers on cancer research that they so seldom provide general summaries of the state of our knowledge suitable for the educated layman. In response to an invitation Dr. W. Cramer prepared such a summary which was published in the *Nineteenth Century and After* for April and May last. Only those who have attempted the task, writes Dr. Murray, can have any idea of the difficulties involved in conscientious work of this kind. The constant wariness which must be exercised to secure accuracy without the use of technical terms, or ordinary words which have acquired a special technical significance, makes the preparation of such articles a time-consuming labour. Two matters of special interest are mentioned at greater length. The work under the Atholstan grant at the Stroud laboratory has advanced sufficiently to permit of publication. In one paper Dr. A. M. Begg dealt with the successful propagation of very slowly growing fibro-sarcoma of the fowl. This was at first thought to be a benign tumour, but the occurrence of metastases in one of the propagated tumours relegates it definitely to the malignant category. This interesting observation draws attention to the close similarity between the benign and malignant tumours. In his second paper [1] is described a filtrable endothelioma of the fowl easily propagated by grafts of living tumour tissue and leading to the formation of large masses of new growth with metastases in internal organs and in superficial lymphatic glands. In addition growths can be produced by the injection of dried material and of cell-free filtrates. In this respect, writes Dr. Murray, the tumour behaves in the same way as the sarcomata of the fowl described by Rous and others, and Dr. Begg has been able to carry out inactivation and reactivation experiments on the model of those devised by Dr. Gye with the Rous tumour, with similar results. The tumour used by Dr. Begg differs in structure from the fowl sarcomata previously described, and provisionally it is regarded as arising from endothelial cells of the blood-vessels. A visit paid by Mr. H. G. Crabtree and Dr. Cramer last summer to the Kaiser Wilhelm Institute of Prof. O. Warburg in Berlin leads Dr. Murray to include in his report a short statement of Warburg's biochemical conception of the nature of cancer. The metabolism of carbohydrates supplies the chief energy-yielding processes for all the tissues of the body. Normal tissues obtain energy for growth by a pure oxidation process resulting in the production of carbon dioxide and water. If they are deprived of oxygen they fail to survive, on account of this restriction in their method of utilising carbohydrate. Tumour tissue, Warburg finds, has not merely this capacity to break down carbohydrates by normal respiratory processes, but also, when deprived of oxygen, can derive sufficient energy for survival by breaking down the carbohydrate (in the manner used by yeasts)—i.e., by a splitting process yielding lactic acid as the final end-product. Even when the supply of oxygen is not restricted tumour tissue makes use of both the oxidation and splitting processes, thus betraying a mode of metabolism

[1] THE LANCET, 1927, i., 912.

which is characteristic, and differentiates it from all other normal tissues, with the curious exception of the retina. On this basis Warburg suggests a hypothesis accounting for tumour origin. He conceives that normal tissues are not homogeneous but consist of a mosaic of cells, growing and surviving by oxidative breakdown of carbohydrate, interspersed with isolated cells which have the dual capacity of utilising carbohydrate by the oxidation or splitting processes. Under abnormal conditions, when any group of cells suffer an oxygen deficiency, the chances of survival are greatly in favour of the latter cells, which then provide the nucleus for subsequent development of malignant tissue, which retains this characteristic method of carbohydrate metabolism. The total expenditure of the Fund during the year amounted to just short of £12,000, of which office expenses absorbed less than 9 per cent.

THE USE OF WHITE LEAD IN PAINTING.

THE Lead Paint (Protection Against Poisoning) Act was passed on Dec. 15th last. Under Section 2 of this Act women and young persons were prohibited from painting buildings with lead paint as from the 19th day of this month except in the case of women so employed at the date of the passing of the Act. Two exceptions were, however, made to this prohibition in favour of (1) persons employed as apprentices, and (2) women or young persons employed in special decorative or other work, not of an industrial character. An Order just issued by the Home Office now makes these exceptions more precise. Its effect is to relax the prohibition under Section 2 of the Act (1) in the case of any male young person employed under an indenture of apprenticeship or under an established custom of regular apprenticeship (subject to the condition that his name, age, and the date on which he was first engaged as an apprentice are entered in a separate list attached to the register of employees which the employer is required to keep); and (2) in the case of any woman or young person employed in "the execution of wall or ceiling paintings, or any similar work of decorative design." Nothing in this Order, it should be noted, will relieve any employer from the obligations imposed by the regulations contained in Section 2 of the Women and Young Persons (Employment in Lead Processes) Act, 1920.

Those who would gain a concise view of the present use of white lead in the painting industry should refer to a volume [1] just issued by the International Labour Office at Geneva, wherein is brought together under one cover information gathered from all over the world. Previously the only volume claiming to cover similar ground was that compiled by F. L. Cantineau in 1921 [2]; but this was written definitely to present the case against white lead. The new volume is the outcome of the discussion which took place at the third session of the International Labour Conference, held at Geneva in 1921, when it was unanimously decided that delegates should advise their Governments to take steps to prohibit the use of white lead in paint used on the interior of buildings, while adopting stringent regulations where paint containing lead is used on the outside of buildings. The volume opens with an historical sketch of the movement against the use of white lead; it seems that the campaign originated and has been followed up by countries where zinc white, the great rival of white lead, is manufactured, while the leading opponents have been the countries where this material is not manufactured. The medical aspect of the question is then fully stated. The risk to which painters are exposed arises nearly entirely from the inhalation of lead-containing dust generated when painted surfaces are rubbed down dry, although the possibility of danger from inhaling turpentine vapours cannot be excluded. Statistical data indicate that the lead risk for painters is not confined to one country or one climate; it is widespread. Even the advocates of the continued use of white lead in paint allow the existence of the risk. They claim, however, that dry rubbing down can be abolished in favour of using waterproof sand-paper; recent experience indicates that the hopes entertained from this innovation are not being entirely fulfilled. Technical information is given as to the value of different paints and their costs; the economic aspect of the problem appears to be somewhat in favour of white lead. Next follows a discussion of legislative procedure adopted in different countries; two courses are open, either prohibition or strict regulation of the use of lead. In this and other sections of the volume the relevant information is stated fairly and without bias. Many of the facts, technical details, and health statistics are derived from work done on behalf of different committees, by experts in Great Britain and in other parts of the Empire. Thus we learn how two committees appointed in 1911, one to consider the danger arising from lead in paint used upon buildings, and the other upon coaches and carriages, both reported in favour of prohibiting the use of lead in paint; that simultaneously with the holding of the conference at Geneva in 1921, a further committee was appointed which recommended that the conclusions arrived at in Geneva should be adopted; and that the Government, with this technical advice coming from its own experts before it, saw fit to adopt a code of regulations made under the Factory Act for the painting of coaches and carriages, and another code under the 1926 Act already mentioned. The book contains a number of valuable tables and useful graphs, and includes among its appendices the official report of the 1921 Conference.

[1] White Lead. (Data collected by the International Labour Office in regard to the use of white lead in the painting industry.) Studies and Reports, Series F, Industrial Hygiene, No. 11, Geneva, 1927, pp. 409. 8s.

[2] La Céruse. Paris and Liége. 1921.

THE STORY OF A PHARMACY.

IN the year 1715 Silvanus Bevan, apothecary, and afterwards Fellow of the Royal Society, took over the lease of premises in which the poet Pope was born. The pharmacy thus established in a small court off Lombard-street not only enjoys prestige as the oldest of its kind in London, and as the cradle of a business of world-wide scope, but also has sent out distinguished workers into the fields of pharmacognosy, botany, and chemistry. Most of the early proprietors were members of the Society of Friends; and in the troubled international conditions of the late eighteenth century the formation of an overseas connexion was not accomplished without many delays and hesitations occasioned by privateers, conscience, or both. We find, for instance, one of the Bevans writing to a certain Dr. John Gill, of Barbados, in 1779: "Of the books none specified are omitted that are in print, except 'Chesterfield,' the 'Polite Lady,' and the 'United Friends.' I hope thou wilt excuse the freedom. From what I have seen of the first of these I know it is calculated to recommend folly, vanity, and vice . . . ." The main interest, however, of the story, so well told by Mr. Cripps,[1] lies in the contributions to various sciences made by men who were either partners in the firm or near relatives. Daniel Hanbury, joint author with Flückiger of "Pharmacographia," was an accurate, highly-trained observer in pharmacognosy and in botany: he accompanied Sir Joseph Hooker to Palestine in 1860, and during the last few years of his life collaborated with his brother, Sir Thomas Hanbury, in stocking the garden at La Mortola, which is still one of the glories of the Italian Riviera. Botanical investigation has also been carried out by Mr. F. J. Hanbury, the owner of a remarkable rock garden in Sussex. From 1797 to 1806 William Allen, then head of the business, had as partner Luke Howard, who afterwards founded the

[1] Plough Court: The Story of a Notable Pharmacy, 1715–1927. Compiled by Ernest C. Cripps, M.P.S. London: Allen and Hanburys, Ltd. 1927. Pp. 227. 10s. 6d. (to medical practitioners, 5s.).

important manufacturing concern now identified with fine chemicals, and especially with quinine. During those nine years many small-scale experimental processes were tried at Plough-court, and incidentally it was realised, with the assistance of two outbreaks of fire, that the heart of the city was not the ideal place for the production of chemicals. John Thomas Barry, who was admitted a partner in 1818, had a highly individual method of dealing with such troubles. Finding, one Sunday morning, that smoke was issuing from a cupboard, he pasted strips of paper over the crevices and sat down to read his Bible, correctly estimating, as it turned out, that the supply of air would soon be exhausted. Barry is chiefly remembered by his invention of evaporation in vacuo, the details of which were given in a paper presented to the Medical and Chirurgical Society in 1819. William Allen, Barry's senior partner, became by degrees a figure of European fame. A friend of the Duke of Kent, Queen Victoria's father, he took a leading part in religious and humanitarian projects which had the Duke among their patrons, and travelled extensively to promote their success. The volume in which the story is told is admirably printed and illustrated, although it is odd that none of the compilers (of whom there have been three) has seen fit to correct "the Linnæan Society" and "Sir Humphrey Davy." But the difficult transition from the record of past achievement to the description of present methods of manufacture has been accomplished with discretion.

THE INVESTIGATION OF OTOSCLEROSIS.

AT a recent meeting of the Section of Otology of the Royal Society of Medicine the President, Mr. J. S. Fraser, delivered an interesting address upon otosclerosis, in the course of which he made a proposal for a national investigation of the condition, saying that, while the problems appeared to concern otology alone, for their satisfactory evaluation the coöperation of other branches of the medical profession was required. "Some medical men failed," he said, "to diagnose the disease when confronted with it. When he began the study of otology in 1904 he spent many useless hours in the hospital in testing patients who were supposed to be suffering from chronic otitis media, and who showed no improvement after middle-ear inflation. It had since dawned on him that otosclerosis was not an uncommon disease, and he found that 10 per cent. of his patients suffered from it. If the victims of it had been exclusively old, or past middle life, it would not be so serious, but most of the cases were in young people. Females were most affected, in the proportion of three females to one male. At least 50 per cent. of the subjects of it gave a history of deafness in the family. Microscopical examination carried out in early stages showed areas of spongy bone in the labyrinthine capsule and at the anterior margin of the oval window. Some of the cases had also fragility of bones and blue sclerotics. Dr. Albert Gray's estimate was that 1 in every 200 people suffered from otosclerosis. In its production the main fault seemed to lie in some abnormality of endocrine glands, but inquiry had yet to go a long way before any association could be established between this disease and malformation or inadequacy of ductless glands." Mr. Fraser went on to point out that careful researches on the subject were now proceeding in America, but he deprecated waiting for the American results, believing that coöperation was better than competition, and that an international inquiry would be the most potent means of arriving at the truth. The Otological Section thoroughly endorsed the proposal which his words led up to—namely, that a central committee should be formed by the Section to coördinate and organise research of a wide character, the suggestion being to enlist the help of the large hospitals and teaching schools of the United Kingdom. The proposal was supported by Mr. Sydney Scott, Dr. Kerr Love, Sir William Milligan, Sir James Dundas-Grant, Mr. G. J. Jenkins, Mr. Herbert Tilley, Mr. J. F. O'Malley, and Dr. Dan McKenzie among others, and the council of the Section was empowered to act in accordance with it.

HEALTH EDUCATION OF THE PUBLIC.

Sir Arthur Keith, in an admirable after-dinner speech which we report elsewhere (p. 1149), remarked on the real difficulty of getting through to the public with scientific medicine. Year by year young men and women, equipped with the spirit and knowledge of their craft, go out into the world to succumb to the craving for magic which lies deep in human nature. The British Association, of which he is this year President, has for its central aim to share the knowledge of trained observers with the public at large. Another agency for the same purpose is the League of Red Cross Societies, which publishes a monthly review in three languages, of which the English edition is called *The World's Health*. The contents of this review are not copyrighted, reproduction of the articles being welcomed, provided that due acknowledgment of their source is made. A special number for October deals with certain problems of health education. Dissemination of knowledge, as Sir George Newman lays down in a foreword, is useless unless it is in a form readily understandable by those to whom it is addressed. The channels along which knowledge should be made to flow are five in number: (1) sanitary environment; (2) healthy race; (3) resistant body; (4) methods of reducing mass infection; (5) early diagnosis and treatment of disease—and the field for public education in these matters is boundless in extent and full of opportunity. Dr. René Sand, who advises the League on popular health education, remarks that up to quite recent times it was possible for a man to assume high responsibilities in mercantile life without having the slightest notion of the importance of hygiene in industry; and for citizens to found families while being quite ignorant of domestic or sex hygiene. He deprecates the use of technical arguments in matters of diet, and advocates simple advice along the lines of what might be called intelligent omnivorousness. The place par excellence for health education of this kind is in the schools. It is a side of the work which the school medical service, as at present constituted, cannot adequately tackle, and there is urgent need to improve the standard of health knowledge among the teaching staffs in all the schools of the country, and, having done it, to send them out with a real desire to teach what they know. Twenty minutes a week devoted to the simple things of health in every school would within ten years do away with the need for most of the posters and pamphlets which Dr. Sand deals with so well. Any practitioner having to deal with young persons in industry will realise that one of the most hopeful ways of attempting to bridge the "gap" from 14–16 years of age in the medical benefit is so to educate children at school in the care of their health that they will be able in no small measure to bridge the "gap" for themselves by the simple method of avoiding sickness. Commonsense rules, devoid of fussiness or of the technicalities which Dr. Sand condemns, will, if inculcated at school during the plastic age, last as an abiding asset through life. There are many excellent black-and-white reproductions of various health propaganda posters in this number of *The World's Health*, together with a coloured inset of posters from different industries in all parts of the world. These are chiefly attempts to educate workmen in accident prevention. The art of producing attractive posters is comparatively new, and the specimens here given are good of their kind; but it is necessary to be aware of certain drawbacks to their use. Employers may spend much money on these things and forget the less spectacular but more important side of health education—namely, the written and, to a still greater degree, the spoken word. There is one curious omission from this health educational number—at

a rough computation 20 per cent. of the loss to industry in sickness is due each year to the common cold, which many believe to be largely preventable by more careful attention to ventilation and proper working temperature.

AVERTIN.

SOMEWHAT conflicting reports come from Germany regarding the recently introduced narcotic, avertin [1] (E 107, tribromethylalcohol). Some surgeons find that the anæsthesia it produces is as efficient as any that they know, besides being more pleasant, whilst others declare that the dangers of avertin put it out of court as a means of anæsthesia in practice. Experience is not yet very wide—some 3000 cases form the largest series yet reported—but it is probable that a definite generally held opinion will eventually be forthcoming as to the advisability of adding avertin to the commonly used anæsthetics. British anæsthetists would naturally like to play a part in the formation of this opinion by investigations of their own, and we are glad to know that through the zeal of Dr. Fritz Eichholz and the good offices of Dr. H. H. Dale, a certain amount of avertin is likely to be available in the near future for a limited number of clinical trials in this country. It is obvious enough from what has already been done that the solution of avertin requires of the anæsthetist special care in its preparation and testing shortly before use, and that the risks associated with all forms of rectal anæsthesia are certainly no less, even if they are no greater, with avertin than they are with ether.

WATER DIVINING.

Prof. J. W. Gregory, the well-known geologist, in a paper read on Nov. 17th at the Public Works, Roads, and Transport Congress, gave an historical account of the alleged art of water divining with descriptions and summaries of critical tests to which the method has been subjected. The use of the divining rod goes back to ancient times, and even to-day public bodies employ diviners to recommend sites for well-sinking. Some supporters claim that the rod responds to external physical influence, and the diviner himself usually denies exerting any muscular force when the rod is strongly moved. That such a widespread and powerful influence should exist and be incapable of other experimental demonstration is difficult to reconcile with scientific knowledge, and all the movements of the rod can be produced by anyone who cares to learn how to hold it. An alternative view admits the part played by muscular action, but retains a claim for the mysterious by postulating a kind of second sight, by which the diviner senses the presence of any object for which he is searching, such as oil, metals, buried treasure, letters in an envelope, future events, underground water, or some special person. This frankly places the divining rod in the same category as planchette and other spiritualist mechanisms. A third explanation brings such mechanisms into relation with other phenomena that have already been investigated by medical psychologists. The theory of dissociation of consciousness, which conforms to the scientific canons in so far as it usefully summarises many happenings and does not clash with anything in the general body of human knowledge, allows us to regard the water diviner as possessed of information and powers of deduction which he unwittingly applies in producing movements of the rod, just as the hysteric will, under the influence of motives not fully conscious, produce muscular movements or paralyses which he declares to be independent of volition. Whilst it does not involve the accusation of conscious fraud, this explanation denies to the diviner any knowledge that he could not attain by the exercise of his ordinary senses. Prof. Gregory describes many tests in which such knowledge failed to manifest itself. It is freely admitted that water is often found by sinking where the rod has given indications of its presence, but for obvious reasons negative findings are rarely tested, and he gives examples where only the hits were counted. The diviner is often ludicrously astray when he is tested over areas where the distribution of water is accurately known. Diviners who claimed to detect underground oil were tested at the research station of the Anglo-Persian Oil Company and their results accorded with rather unlucky guesswork. Prof. Gregory fears that it may seem disrespectful to those who believe in the divining rod to compare it with such an obsolete habit as witch-hunting, but he remarks that the human mind in all people and amongst all ages has many features in common and is greatly influenced by coincidences and unexplained phenomena. If water divining really has such close affinities with witchcraft and fetish as he believes the widespread trust in the method is rather disconcerting in a scientific age.

[1] THE LANCET, 1927, i., 718, 1037, and 1266.

PROF. PIRQUET'S VISIT.

THE visit to London of Clemens Freiherr von Pirquet has given the medical profession an opportunity of attaching more personal characteristics to the eponym of a tuberculin reaction and the originator of a world-wide system of dieting children. There are some, apparently, who are unaware of an intervening period in Dr. Pirquet's career, when he occupied the chair of pediatrics at Johns Hopkins University and infused an element of freshness into child study in America. Dr. Pirquet (as he prefers to be called) has recently been elected president of the "Save the Children" International Union at Geneva, and in this capacity he addressed, while in London, a large gathering of supporters of this Fund. He gracefully acknowledged the help given by this country to the children of Vienna during the famine years, and attributed directly to this foreign help the fact that Vienna itself is now doing more for its children than ever before. Timely help in the crisis of their infancy has brought the children back to an almost normal state of health. Rickets, then extraordinarily prevalent in Austria, seems likely to disappear there entirely within the next few years, and Dr. Pirquet is optimist enough to believe that the same may be true of tuberculosis in a quarter of a century. Summer diarrhœa among children, he said, was also disappearing in many countries; only in France is the disease still rife, not because the French hold child-life in any less esteem than we do, but because of the prevailing custom to send the children into the country during the summer, where they drink unsupervised milk. He put in a plea for regarding the common cold as highly infectious to infants, many of whom, he thought, died from pneumonia arising from a simple cold in the head. His final remark, that possibly not more than 2 per cent. of infantile deaths are unpreventable, was coupled with the practical suggestion to concentrate on districts where a specially high mortality is recorded.

TREATMENT OF HICCUP WITH CARBON DIOXIDE.

IN a recent paper [1] Dr. R. F. Sheldon discusses the treatment of hiccup by the inhalation of carbon dioxide. Hiccup is a spasmodic contraction of the diaphragm, and its cause is probably abnormal stimulation of the respiratory centre, either directly or through afferent fibres in the phrenic nerve. The stimulus to the centre which produces normal breathing is an increase in the tension of carbon dioxide in the blood, and 5 per cent. of CO_2 in the inspired air is more effective than anything else for increasing the depth and strength of respiration. With this maximal stimulus it is reasonable to suppose that abnormal or lesser stimuli causing hiccup will be ineffective, and that respiration will be uninterrupted. In administering CO_2 for this purpose Dr. Sheldon used the Henderson-Coburn machine in hospital and

[1] Jour. Amer. Med. Assoc., Oct. 1st, p. 1118.

the Gwathmey anæsthesia apparatus (Seattle model) in his private practice; both of them show the approximate percentage of CO_2 in the air given. He describes 11 cases. In seven of them hiccup came on after a laparotomy; in one it followed an operation for abdominal hernia; in two it occurred during and after gas-and-oxygen anæsthesia; whilst the remaining case was one of the epidemic type. Carbon dioxide was inhaled for periods of from 1 to 20 minutes, being breathed until the hiccup was controlled, which was usually within two to five minutes. Inhalation was resumed if hiccup returned, and the plan was to go on with the administration of CO_2 till there was no further recurrence. Success is reported in 10 out of 11 cases. Most of the patients welcomed the treatment as it produced no discomfort, although in one case inhalations were given regularly for five days (the greatest number in a day being 36), after which the hiccup ceased permanently. Unfortunately the CO_2 causes an increase in blood pressure and respiratory effort and some exhaustion, so that Dr. Sheldon cannot advise its use for very debilitated patients. Theoretically, too, it may increase the chances of hæmorrhage after abdominal operations, especially when the stomach and gall-bladder are involved; but in this respect the sudden contraction of the diaphragm in hiccup is probably more dangerous than deep breathing. In order to control hiccup during anæsthesia carbon dioxide may be given by the simple process of making the patient rebreathe his expired air.

ORTHOPÆDIC TREATMENT IN LONDON.

ORTHOPÆDIC surgery became prominent in the middle of the nineteenth century because such operations as tenotomy and osteotomy were relatively safe in pre-antiseptic days, and because the correction of deformities could be largely carried out by mechanical and non-operative means. When antiseptic and aseptic principles had reduced the dangers of every kind of operation, the keen surgeon was drawn to other lines of work, so that many of those who practised orthopædics were old-fashioned, relying still on the simpler operations and on mechanical methods and failing to follow the more progressive trend of modern surgery. It is only comparatively recently that this important branch of treatment has come back into its own.

In 1909, when the Royal National Orthopædic Hospital built its out-patient department, the new accommodation seemed to allow room for considerable expansion. It was not expected that within 20 years the hospital's work would increase more than fourfold and that considerable extension would again be needed. The increase in work has not been due simply to an increase in the number of cases of the same class as came to the hospital 25 years ago, but rather to an enlarged view of what constitutes a case suitable for treatment, and to a recognition of the fact that the orthopædic surgeon, if he is a competent operator, is the right person to deal with most of the surgery of the limbs, including the disabilities resulting from injuries. The new department, whose opening by the Lord Mayor we report on p. 1158, has long been under consideration, though the plans and building were delayed first by the war and then by lack of money. Besides a handsome waiting-hall, two sets of consulting rooms with operating theatre and plaster room, and ample offices for the almoners, it contains large and well-equipped workshops which enable the hospital to make not only its own surgical appliances for individual patients but also the various splints and frames, used as mechanical aids to treatment. The old out-patient department has been converted for use for massage and electrical and other forms of physical treatment, and there is a large new radiographic department and photographic studio, besides fresh quarters for the resident staff, which were badly needed. The in-patient department of the hospital has also long proved inadequate, but some years ago a decision was wisely made that no extension of in-patient work should be made on the Great Portland-street site. A small country branch had been established at Brockley Hill, Stanmore, only 10 miles from the parent hospital. Fortunately, a very large area around this has been purchased by the hospital, and simultaneously with the building of the new out-patient block a start has been made in building an entirely new country hospital on this site. So far an operating block, consisting of well-equipped theatres with two adjoining wards to house the patients before and after operation, has been completed, as well as one large, open-air block, and a building for kitchen and administrative purposes. It is proposed that additional open-air blocks shall be built as they are required and as financial conditions permit.

The Lord Mayor, in his opening address, called attention to the importance of extending orthopædic work to the treatment of adult cripples, and particularly of those suffering from industrial accidents and chronic disabling disorders of the joints. In the work of the hospital these branches of work are becoming more and more important. As the general organisation for the care of crippling conditions in childhood improves throughout the country, the children are treated earlier and more satisfactorily and require on the whole less in-patient accommodation, although the treatment of tuberculous disease of the joints still necessitates the upkeep of a large number of beds at the country branch. It is to be hoped that these extensions of in-patient accommodation will in the future enable the hospital to take more and more of the adult cripples besides carrying out the work that it has already done in the past for children. Heavy expenditure has been involved and, although Prince Henry was able to announce at the opening ceremony that the new out-patient department is paid for, the buildings at Brockley Hill are not in the same happy position, and a debt of £40,000 will remain outstanding upon these, unless it can be met by additional gifts.

WE regret to announce the death of Mr. Richard Anglin Whitelocke, lecturer on surgery at the University of Oxford, which occurred on Saturday last, Nov. 19th, in his sixty-seventh year. Mr. Whitelocke had been in bad health for some time.

THE King has approved the appointment of Sir Farquhar Buzzard to be Regius Professor of Physic in the University of Oxford in succession to Sir Archibald Garrod, who will shortly retire. Sir Farquhar Buzzard is physician to St. Thomas's Hospital and has been Physician Extraordinary to the King since 1923. He was created a Knight Commander of the Victorian Order at the beginning of this year.

EXETER ORTHOPÆDIC HOSPITAL.—The Duchess of York last week opened an orthopædic hospital for Devon and Exeter in the capital city of the county, which has been erected at a cost of £25,000, and dedicated a "Princess Elizabeth Cot" subscribed for by women and girls. The operating theatre block has been presented and equipped by the Rotary Club of Exeter.

WEMBLEY HOSPITAL STAFF.—The following have been appointed to the consulting staff of the new Wembley Hospital, which will be opened in the New Year: honorary consulting physicians, Sir John Rose Bradford and Dr. C. E. Goddard; consulting physicians, Dr. Batty Shaw and Dr. Norman Hill; consulting surgeons, Mr. E. K. Martin and Mr. P. H. Mitchiner; consulting surgeons for the diseases of women, Dr. J. W. Bell and Dr. Gertrude Dearnley; consulting surgeon for diseases of the eye, Mr. R. C. Davenport; consulting surgeon for diseases of the throat, nose and ear, Mr. Douglas Robertson; consulting physician for diseases of the skin, Dr. A. C. Roxburgh; consulting anæsthetists, Mr. A. F. Potter and Mr. H. N. Webber; consulting pathologist, Dr. H. A. Osborn. The consulting radiologist has not yet been appointed. The local staff will comprise the whole of the medical practitioners of the Wembley area.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCLI.

THE TREATMENT OF SEA-SICKNESS.

THERE is a well-marked variation in liability to sea-sickness shown by different age-groups, sex-groups, and individuals. Infants under 1 year of both sexes are practically immune from this complaint, possibly owing to the non-development of their sense of balance. An adult could never experience with impunity the tossings and rockings a baby has to endure. Old people of both sexes are also practically immune. The athletic type in whom powers of oxidation are well developed suffer very little; heavy and even moderate drinkers who have acquired the habit of quickly oxidising carbohydrates also belong to this class. On the other hand, the hypoglycæmic diathesis is a direct predisposing cause. This group includes children liable to *cyclic vomiting*, certain types of *endocrine dysfunction*, sufferers from *migraine*, and those liable to ketosis from slight causes. *Pregnancy*, in which there already exists a disturbance in metabolism, causes excessive sea-sickness. Nephritis, with its diminished blood carbonate reserve, and diabetes with pre-existing ketosis are also predisposing causes. The well-known type of person who vomits before the ship sails again comes under a different category, and requires different treatment. Such a case should be treated by reassurance, and if very agitated a sedative such as pot. brom. gr. xx. is useful.

Differential Diagnoses.

Sea-sickness is liable to occur with, and to obscure, certain much more serious conditions, and it is imperative to ascertain that no grave underlying disease is present. The condition most commonly met, and one which may cause great difficulty in the differential diagnosis, is *acute appendicitis*. This may mimic sea-sickness very closely; vomiting, abdominal pain, and headache may be complained of in either case. The abdominal pain in sea-sickness, however, does not cause rigidity, there is no rise in temperature, but rather the reverse, and an hourly pulse and temperature chart will make the diagnosis clear. *Acute intestinal obstruction* may be a complication of sea-sickness, since the act of vomiting may cause either obstruction by a band or incarceration in a hernial sac. The pain in obstruction is far more severe than that caused by sea-sickness, and once suspicion is aroused a careful abdominal examination and the administration of one or two enemata will leave no doubt as to whether obstruction exists. Perforations, especially of gastric ulcers, may be masked by sea-sickness; a perforation causes much more severe pain and shows those characteristic signs of rigidity and collapse which are pathognomonic of this catastrophe. There are medical conditions also liable to be overlooked, including the typhoid and paratyphoid fevers, and, especially when sailing in the East, small-pox. These possibilities have been stressed because the patient invariably attributes all his symptoms to sea-sickness and may mislead his physician unless the latter always keeps the graver diseases in his mind.

The Breaking of a Vicious Circle.

When other diseases have been excluded and the type of case being dealt with has been ascertained, the treatment of sea-sickness resolves into the breaking of a vicious circle.[1] Whatever the cause of the initial vomiting, whether nervous, due to labyrinthine stimulation, irritation of the splanchnic sympathetic, gastric irritation, or ketosis following hypoglycæmia, the persistent vomiting combined with the absence of food soon causes a ketosis. It is vital, therefore, to administer carbohydrate to the patient, and the easiest and pleasantest way is to give orangeade made with glucose (glucose, one tablespoonful, one squeezed orange to one tumbler of water with ice). This is absorbed directly from the stomach, and if it is only retained a few minutes some is absorbed. The patient should be encouraged to sip a little of this drink as often as he likes and very soon the worst feelings will pass way. Diminished urinary excretion is a marked feature in sea-sickness, the urine giving a considerable deposit of urates on standing; if the kidneys are not very active they are unable to excrete this concentrated urine and waste products accumulate in the blood: this is another good reason for encouraging the consumption of fluids.

Drug Therapy.

Combined with the administration of fluids and glucose, various drugs which have been recommended from time to time may be tried. The list includes atropine, tr. belladonnæ, cocaine, sodæ bic., chloretone, pot. brom., morphia, hyoscyamus, acid. hydrocyan. dil., cerium oxalate, tr. iodi, bismuth and soda, sodamint tablets, mothersil, seoxyl, and many others. None is specific, but some are helpful under different circumstances. Pot. brom. gr. xx., combined with tr. belladonna ℥ v., is useful in nervous patients, especially in those suffering from insomnia. Belladonna is given with a view to inhibiting the motor effect of the vagus on the stomach. On the same principle atropine may be administered combined with strychnine (atropine gr. 1/100, strychnine gr. 1/32) hypodermically when a patient shows signs of collapse. Chloretone has its advocates. This drug is a gastric sedative and cerebral depressant, and is also suitable for the nervous case. It is given in cachet form in doses of gr. v. not more often than twice a day; generally it is absorbed with difficulty, but it may be absorbed in massive doses should it accumulate in the presence of fatty acids in the bowel. Chloral and bromide may be given per rectum in cases where nothing can be retained by mouth, in the form of a suppository containing chloral hydrate gr. xv. and pot. brom. gr. xxx., three times a day. Morphia may be given hypodermically, but it is very rarely needed if the other remedies are used with discretion. A useful routine mixture consists of two powders: (*a*) pot. bic., gr. xv.; (*b*) citric acid, gr. x.; glucose, ℥ iv. When dissolved in water and mixed these give a palatable effervescent drink which often cuts short an attack. In very bad cases where nothing can be retained by mouth, and where coma is threatening or present, glucose should be administered with saline per rectum, or better 6 per cent. glucose. This solution should be given in 15-oz. doses every four hours, and is nutritive as well as useful in replacing lost fluid.

Diet and Management.

The patient should be kept warm, and the air fresh. This is very important as oxygen scarcity is a direct precursor of ketosis. Part of the increase in sea-sickness observable during storms is due to the necessity of shutting the portholes with a consequent diminution of oxygen-supply. Stewardesses have a habit of advocating a chair on deck as a curative measure; this is not advisable in a cold wind after an attack of sea-sickness, and the recumbent position should be maintained until two meals have been digested. In some cases closure of the eyes affords relief. All causes of emotional disturbance should be avoided, and it is therefore wise to have a receptacle, in a convenient position, for the early stages of the voyage, as this will allay fears rather than encourage its use. As soon as the patient begins to improve light food should be taken. Patients exhibit individual preferences, but chicken sandwiches without butter, biltong spread on dry toast, fruit, jellies, beef-tea are usually acceptable. Tea and coffee with milk are usually badly tolerated, but iced weak tea with lemon and sugar is beneficial. Dry ginger ale, with or without brandy, and cham-

[1] THE LANCET, Oct. 15th, p. 811.

pagne have their supporters. It is wise to recommend the patient to avoid all fats, but otherwise to take plenty of food even if it is not all retained.

Complications.

Apart from the acute surgical emergencies which may arise either along with or due to sea-sickness, there are sequelæ which require treatment. *Constipation* is a common complaint which is due to the change of diet and mode of life. An effervescent saline aperient given before breakfast is very useful, Seidlitz powder being especially so, as it is laxative, effervescent, and alkalising. If these do not agree the aperient habitually taken by the patient should be allowed.

Diarrhœa often accompanies severe sea-sickness. The exact cause of this is uncertain, but it is possibly due to a pancreatic disturbance. It may be very troublesome but passes away as vomiting lessens.

Cystitis.—True cystitis does not occur as a sequela of sea-sickness, but a condition resembling it clinically is frequently seen. It is due to the unusual concentration of the urine and not to microbial infection. A few doses of the following mixture will soon alleviate the condition: pot. cit. gr. xx., tr. hyoscyam. ℥ xx., inf. buchu co. ad. ℥ ss., t.d.s. This treatment is preferable to the giving of acid sodium phosphate and hexamine since the urine is usually very acid already; the condition is not an infection, and tends to clear up when the urine is rendered more alkaline.

Headache.—If there is no acetone in the urine the headache should be treated on ordinary lines by the exhibition of aspirin gr. x., phenacetin with caffein gr. x., &c.; the presence of acetone in the urine is a sign that more glucose is required.

Short Voyages.

For short journeys a rather different method of treatment is required. Poor sailors should partake of a good meal two hours before embarkation, and take chloral gr. v. or pot. brom. gr. x. to xv. Immediately on embarkation the dose should be repeated and the patient should lie down. In this way a short journey may often be passed in comfort.

G. H. ORIEL, M.D. Camb.,
late Surgeon, Canadian Pacific Steamships.

Special Articles.

GENERAL MEDICAL COUNCIL.

PRESIDENT'S ADDRESS.

THE 126th session of the General Council of Medical Education and Registration opened on Nov. 22nd with the customary address by the President, Sir DONALD MACALISTER. He began with sympathetic reference to the death since the last session of the Council of Prof. Harvey Littlejohn, of Edinburgh, and Mr. Thelwall Thomas, of Liverpool, whose places had been filled by Prof. J. Lorrain Smith and Mr. K. W. Monsarrat. Another change in the membership of the Council was occasioned by the appointment by Manchester University of Prof. J. S. B. Stopford to succeed Prof. R. B. Wild. The Queen's University of Belfast had sent Prof. R. J. Johnstone, M.P., in succession to Colonel Sinclair, M.P., who retained his seat on the Council in another capacity as Crown nominee. The President continued:—

Registration in the Irish Free State.

"Four members of our body have been appointed to the Irish Free State Medical Registration Council, established under the Free State Act, passed in accordance with the recent agreement to which I made reference in my last address. The election of our colleague Dr. Coffey as President of the Irish Council goes far to ensure its smooth and effective working, in coöperation with our own body. The British Bill for the ratification of the Irish Agreement has passed through the House of Lords. It is expected to come before the House of Commons during the present session of Parliament.

Pharmaceutics.

"The committee considering the question of the method of preparing the next British Pharmacopœia has practically completed the taking of evidence, and will, I learn, proceed forthwith to the drafting of its report. But I shall have no fresh information on the subject to communicate to the Council at the present session. We are still awaiting the conclusions of the Privy Council Committee on the Poisons and Pharmacy Acts. These conclusions may have bearings on medicine, which will call for your consideration at a later date.

The Colonial List.

"The Executive Committee has had communications, through the Privy Council, from Quebec, Ontario, and New Zealand, which indicate a disposition in these parts of the Empire to withdraw from practitioners registered in the Medical Register the privileges of practising within their respective territories which have hitherto been accorded them, in virtue of reciprocal agreements made by Order in Council. The ground for the withdrawal seems, generally speaking, to be a desire to 'protect' certain local professional interests. If no modification of the views held by the provincial authorities on this subject can be brought about, the Privy Council will have to consider whether the privileges granted by this country to practitioners from these British possessions now registrable on the Colonial List of the Register can justly be continued.

Indian Standards.

"The reports of the Executive Committee, based on the results of the visitations and inspections of Sir Norman Walker and Colonel Needham, have been duly forwarded to the Secretary of State for India, the Indian Government, and the Indian Universities. There has as yet been time for little more than formal acknowledgments of their receipt; but from numerous unofficial communications we may gather that the desire of the Council to assist the Indian authorities in their efforts to improve the methods and standards of medical education in India has been gratefully recognised. We further learn that definite steps have been taken to bring before the Central Legislature the question of establishing, by the agency of an all-Indian Council, some form of control of Indian standards of professional qualification. It is of interest in this connexion to record that both Sir Norman Walker and Colonel Needham have been severally invited to visit the United States, within the next few months, for the purpose of giving to certain medical authorities in that country the benefit of their special experience in matters of medical education and examination.

Medical Education.

"The Education Committee will probably be able to present to you at this session a final report, setting forth the progress made by the several teaching and examining bodies in this country towards giving legislative effect to the Council's resolutions on the medical curriculum, which came into force in January, 1923. It is satisfactory to observe that, almost without exception, the regulations of the licensing bodies are now in practical conformity with the principles laid down by the Council. The circulation of the final report among the bodies concerned will without question be of service to the cause of professional training and testing. Each body will find something of value for its own use in the experience and practice of the others. The Examination Committee, in like manner, will have a report to submit on the visitations of professional examinations other than the final or qualifying examination. From this report also much may be learned regarding the merits

of diverse examinational methods and arrangements. The regulations for the registration of medical and dental students have been carefully revised by the Education Committee, with a view to greater clearness and consistency in their statement. The amended form will be submitted for your approval."

In conclusion, the President stated that in company with Mr. Eason he had appeared before the Departmental Committee on the Registration of Opticians Bill, and given evidence in support of the memorandum on the subject which appears in the Council's Minutes. So far as he was aware the decision of the committee had not yet been published.

Sir HOLBURT WARING proposed, and Sir NORMAN WALKER seconded, a vote of thanks to the President for his address. The following appointments were officially notified: (*a*) Mr. Robert James Johnstone, representative of Queen's University, Belfast, for three years from June 15th. (*b*) Dr. John Sebastian Bach Stopford, representative of Manchester University for three years from Oct. 22nd. (*c*) Dr. James Lorrain Smith, representative of Edinburgh University for five years from Oct. 24th. (*d*) Mr. Keith Waldegrave Monsarrat, representative of the University o Liverpool, until Dec. 31st, 1930.

The Council then considered penal cases.

MEDICINE AND THE LAW.

Unsuccessful Claim for Negligence.

Dr. J. M. Todesco, resident medical superintendent of the Croydon Borough Isolation Hospital, and Dr. J. Elder, formerly assistant medical officer at the hospital, are to be congratulated upon the failure of the protracted proceedings initiated against them by Mrs. Venn. The plaintiff, who claimed damages for the death of her husband (in June, 1922) on the ground of the alleged negligence of the two defendants, had made three attempts. The case first came before the Lord Chief Justice in June, 1925; it lasted five days, and ended in the disagreement of the jury. It next came before Mr. Justice McCardie in February, 1926, when it went on for eight days with the same result. It finally was tried before Mr. Justice Horridge from Nov. 11th to 17th, and ended in a verdict for the defendants. The learned judge, at the beginning of the recent trial, explained to the special jury that the claim was brought by the plaintiff under the Poor Persons Rules; this meant that her solicitors and counsel would get no fees, and the same fate, it appears, befell the jurymen. The history of this case seems to suggest that a "poor person" can indulge in litigation which otherwise only a very rich person could afford. If the jury had continued to disagree, Mrs. Venn might have continued indefinitely to occupy the courts to the exclusion of other litigants. Meanwhile, the unfortunate defendants, against whose professional reputation her attack has failed, have no prospect whatever of being refunded one penny of the heavy costs which her three years of litigation have imposed upon them.

Legitimacy Act Applications.

Although applications under the Adoption of the Children Act are heard in camera, both in summary proceedings before magistrates and in the county courts, no such encouragement is given to applicants under the Legitimacy Act. Under the latter Act, it will be remembered, an illegitimate child of parents who afterwards marry can claim a declaration of legitimacy if the parents were in a position to marry when he was born. It would seem at first sight that proceedings under the Adoption of Children Act and under the Legitimacy Act are alike in demanding protection from publicity and curiosity. But the Attorney-General, who is a party to all proceedings under the Legitimacy Act, has refused to agree to their being disposed of in private. It was laid down in Scott *v.* Scott ([1913] A.C. 417) that His Majesty's courts must be open to the public, and that publicity is necessary to the proper administration of justice. Exception is made only where publicity would prevent the proper administration of justice, as, for instance, on an injunction to prevent the exploitation of a secret process or where particular evidence could not be given in open court. In Scott *v.* Scott Lord Halsbury declared that a mere desire to consider feelings of delicacy, or to exclude from public hearing details which it would not be desirable to publish, is not enough to prevent a public hearing. In a recent case under the Legitimacy Act of 1926—a case described as the first petition to be presented under the Act—Lord Merrivale adopted Lord Halsbury's language and said that it was not the law that, if publicity deterred a person from taking proceedings, he should therefore be allowed to bring his case in camera.

There was a strange flaw in the drafting of the Legitimacy Act, 1926. The procedure under the Legitimacy Declaration Act of 1858 was applied without it being noticed that the 1858 Act had been almost entirely repealed and superseded by the Supreme Court of Judicature (Consolidation) Act of 1925. This error was pointed out in a case reported in the *Times* of June 22nd, but appears not to be fatal. The main task before the applicant for a legitimacy declaration is to prove his facts and to ensure that all interested persons should be brought before the court, including possibly the next-of-kin of the putative father. Where there are two or three brothers and sisters who are making an application upon the same set of facts, one set of affidavits and one body of evidence will apparently be accepted by the court on behalf of all the applicants. It may be added that, though proceedings cannot be heard in camera, reputable newspapers may well decide not to publish the names of the parties.

Preservatives in Food.

As is well known, the Public Health (Preservatives, &c., in Food) Regulations of 1925, amended in 1926 and brought into operation at the beginning of 1927, prohibit the use of boric acid and impose conditions upon the employment of permitted preservatives. They provide, for instance, that sausages or sausage meat may contain preservative in the form of sulphur dioxide in the proportion of 450 parts per million. Sausages or sausage meat, if containing preservative, must be labelled to that effect, and articles sold as a preservative are to bear the label "This preservative contains — per cent. of sulphur dioxide." The *Times* of Nov. 16th records two prosecutions under these provisions. In one a firm of manufacturing chemists at Southall was fined £42, and ordered to pay £5 5*s.* costs, at Brentford police-court for selling preservative which was labelled and warranted to contain 7 per cent. of sulphur dioxide, whereas on analysis 11·1 per cent. was found present. It was stated that the preservative powder was retailed to several butchers who had been summoned and fined for using more than 7 per cent. sulphur dioxide in sausages. The defendant firm stated that the consignment, after being prepared, got wet, and that the constituent parts must have changed in the redrying process. The other prosecution on the same day was at the Guildhall, where a West Smithfield company was summoned for selling preservative powder for sausages which contained 0·3 per cent. boric acid contrary to the Regulations. It was pointed out on behalf of the defendants that this amount was trifling compared with what was permitted before the recent Regulations came into force. The Alderman, who heard the summons, refused to accept this as a defence, though he inflicted only a small fine—20*s.* and a guinea costs. It is undoubtedly hard upon defendants who buy in bulk and sell in retail upon the faith of a manufacturer's false description. The defendant company, it was stated at the Guildhall, merely put up in tins the powder which they bought from a well-known firm. It was suggested that the company had done all it could reasonably be expected to do. The Alderman, however, remarked that it could have analysed the powder as had been done by the prosecution.

ROYAL SOCIETY OF MEDICINE.

ANNUAL DINNER.

THE annual dinner, held at the Hotel Victoria on Nov. 16th, was well attended and made memorable by the presentation of a presidential badge, bearing the new coat of arms already described in our columns.[1] Sir JAMES BERRY presided, and the guest of the evening was Lord Darling, who, in proposing the health of the Society, pointed out how his profession had worked for the preservation of medical privilege, particularly by discouraging the administration of arsenic and strychnine and the performance of tracheotomy by unqualified persons.

Sir STCLAIR THOMSON described the origin and appearance of the new badge, of which he was the donor. St. Cosmas and St. Damian had started their career, he said, as Arabian physicians, who resembled their modern successors in their title of "Anargyres" (moneyless) and their aspiration to sanctity. They suffered persecution under Diocletian, but neither imprisonment, beating, nor stoning broke their spirit. Finally they were bound and thrown into the sea, and there was a mural painting by Fra Angelico depicting an angel helping them ashore—"in the presence of two witnesses," Sir StClair Thomson slily added. Cosmas and Damian became patron saints of the great Medici family, and as such appeared in mosaic, painting, and sculpture by the greatest artists of Italy. They had, therefore, a strong claim to be the supporters of the coat of arms. The motto of the old Royal Medical and Chirurgical Society, "Non est vivere sed valere vita," had been retained. It meant (he hoped) "We're all alive and having a good time." Giving of one's own out of love and fellowship was to him the salt of life, and in that spirit he begged the President to accept the chain, badge, and coat-of-arms.

Sir JAMES BERRY, in acknowledging the toast, read a letter from Sir William Church, first president of the amalgamated societies, written within a day or two of his ninetieth birthday. He reviewed the year's progress. There had been an increase of 5–20 per cent. in the services rendered by the various departments of the library, and the "Proceedings" had been greatly improved. The number of Fellows increased steadily, and an immense amount of valuable work had been performed by the sections. He thought, however, that more might be done by special scientific committees in investigating questions of medical science. During the past year, for instance, a joint committee of anæsthetists, surgeons, and pathologists had been considering a matter referred to them by the Ministry of Health. The Society contrived to pay its way, but would be glad to be free of a debt of over £20,000 on the building.

Proposing the health of the guests and the kindred societies, Mr. WARREN LOW speculated on the origin of the custom of toasting the visitors. He liked to think that it was a signal that no further harm to the guests was intended than the speech. The Black Dinner at Edinburgh Castle, and the meal to which certain Roman bachelors had invited their neighbours, the Sabines, must have broken up shortly after the loyal toast. He referred to the difficulties of the doctor in courts of justice, especially when called as "expert witness," a term which he hoped would be judicially condemned as libellous; and when placed in the witness-box to become the butt of judicial humour and the victim of what was aptly called "cross" examination.

Sir ARTHUR KEITH, replying for the guests, referred to the double personality of Barrie and McConachie, and said that the President of the British Association had enjoyed hospitality that evening, but that the gentleman replying to the toast was the humble servant of a proud college. Adapting a remark of Sir Berkeley Moynihan's, he described himself as a poor medical practitioner who had been doomed to practise anatomy, but had always kept his foot in the door of medical practice. He spoke earnestly of the rationalisation of medicine, but there were two great hindrances: the first was the difficulty of coming to a final conclusion as to the proper thing to do; the second, and greater, was to educate the public. There would never be a rational medicine until the public had been educated. If we were rational, a Harley-street address and the doctor's clothes would mean nothing to us. The hospitals sent out young men resolved that, as far as in them lay, they would not be quacks in any sense of the term, that they would be rational; but they did not know what they were up against. It was the public that kept science back. Those who desired to make progress should not look on the human body as a duality, but as a unity.

Among the guests were the Presidents of the kindred societies; the Master of the Society of Apothecaries; Mr. Martin Travers, the designer of the coat-of-arms; Prof. Pirquet, of Vienna; and Mr. and Mrs. Geoffrey Duveen.

[1] Nov. 12th, p. 1036.

BRITISH INSTITUTE OF RADIOLOGY AND THE RONTGEN SOCIETY.

THE inaugural dinner to celebrate the amalgamation of the Institute with the Society was held at the Hotel Great Central, London, on Friday last, Nov. 18th. The dinner was followed by some good and interesting speaking.

The toast of the Amalgamated Societies was proposed by Sir FRANK DYSON, the Astronomer Royal, who humorously contracted out of any necessity for making intimate references to either body, because, while he appreciated the importance of the wedding, he was unacquainted with the exact character of either bride or bridegroom. The Astronomer Royal described graphically the sensation which had been caused by Rontgen's discovery over 30 years ago and which vied with excitement caused by the exploit of Mr. Blériot in flying the English Channel 14 years later; each was an unmistakable demonstration of the march of science. He dwelt upon the suggestive fact that Rontgen to a certain extent had made his discovery accidentally, or rather incidentally, while working at other high problems in physics, but the influence which that discovery had had upon medicine was of a fundamental nature. No doubt, said Sir Frank Dyson, doctors, with vast material for observation and trial, would have discovered much in the location of foreign bodies by elaborately devised employment of probing and perfection of other methods, but medicine saw at once the great field of diagnosis that had been opened up, and was quick off the mark to annex it. He pointed to the development of radiology as instanced by the fact that shortly after Rontgen's discovery the popular exhibition of its surgical and medical significance was to give the guest at a scientific soirée an opportunity of seeing his own skeleton, while to-day a radiological exhibition was a highly standardised and technical affair. He said that from personal knowledge he had been much struck by the shortness of the exposures necessary to arrive at a diagnosis, while the safety of the procedures had also impressed him; and he evidently thought that the attendant at a radiological clinic, who showed the adjacent mortuary to a patient proceeding to the diagnosis chamber, had been unduly cynical. Speaking generally of the advantage of the amalgamation of the bodies working at radiology, he pointed out that the separation of different sections of a common branch of learning was always unfortunate. He would distinctly dislike the science of astronomy to be approached along two different lines of theoretical astronomy and astral physics; in the study of X rays, as in astronomy, the sciences must be ready to receive all advantages, from whatever branch of physics they may be derived.

Sir HUMPHRY ROLLESTON, in reply to the toast, endorsed the Astronomer Royal's plea for union and coöperation in science, pointing out that those who devoted themselves to radiology might otherwise be in danger of getting segregated in their own departments. It is not good, he said, for man to live apart; and if the marriage which they were now celebrating was to be profitable it must not be regarded as a Darby and Joan existence. Rather in this union they had projected a life of increasing activities and especially of thought for offspring, for they intended to found branches in the provinces to be affiliated with the central institute. The previous monthly meetings of the societies would not be given up, and the instruction for the diploma in medical radiology and electrology would be continued, while strong sections of physics and radiology in application to medicine would be active in medical societies. In allusion to the work done by the Rontgen Society in bringing about the affiliation he alluded specially to the President, Dr. Finzi, of whom it might be said that, whichever body was bridegroom and whichever bride, he was the best man. In allusion to the guests present, he pointed out that Sir John Rose Bradford, in his position of President of the Royal College of Physicians of London, was seldom allowed to dine at home, sacrificing the advantages of domestic union for the good of the general union of medical forces. He welcomed the presence among them of Prof. Wachtel, of the Radiological Institute at Cracow, and of Dr. Knox, fortunately recovered from recent illness. In conclusion he announced that the firm of Messrs. Watson and Sons had sent to the Amalgamated Bodies a donation of 100 guineas as a wedding present.

The toast of the guests was proposed by Dr. THURSTAN HOLLAND, who coupled with it the names of the President of the Royal College of Physicians, and Mr. E. H. Rayner, D.Sc., of the electricity department of the National Physical Laboratory.

Sir JOHN ROSE BRADFORD, in reply, categorically refused to speak for anyone like the Astronomer Royal. He was prepared, he said, to deal with matters terrestrial, but Sir Frank Dyson was immersed in matters celestial, while, judging from what occurred at the recent total eclipse in England, he could command the sun to behave in the way best suited to illustrate for himself the expected phenomena. He thanked the Society not only for their hospitality, but for giving him sound moral advice as to the cultivation of domestic instincts, and added that he did not think the company would expect him to expatiate upon the benefits derived by medicine from radiology—they were so obvious.

Dr. RAYNER spoke eloquently of future developments of radiology viewed from the aspect of physics. He claimed scientific descent from his grandfather and his father, and he welcomed the opportunity at the National Physical Laboratory for assisting the development of radiology in the cause of medicine, a development of which he spoke in eloquent terms. He proposed that the guests at this inaugural dinner of the amalgamated bodies should send a message of greeting to Prof. Coolidge, whose name was ever on their lips, as his tubes were ever in their hands.

The health of the President was proposed by Mr. G. W. C. KAYE, D.Sc., superintendent of the Physics Department of the National Physical Laboratory, who said that, from the moment the necessary fusion of the two became imminent, it was felt that there could only be one captain for the ship—namely, he who, from the position of a physician, had done more than any one man for the cause of radiology, and whose management of their affairs had throughout been conducted in so courteous and competent a manner.

Sir HUMPHRY ROLLESTON, in a brief reply, asked all present to join him in drinking the health of Dr. Stanley Melville, to whose efforts the entertainment they were enjoying was due, and mentioned in similar association the names of Dr. John Muir and Mr. Cuthbert Andrews.

Dr. STANLEY MELVILLE felt that he could not take personal credit for what he believed had been a most successful little congress, apart from his colleagues. Dr. Muir's capacity for strenuous work was well known to all the members of the Institute and needed no words from himself except to say that without him all would have been chaos. Mr. Cuthbert Andrews had been a moving force in the organisation, for always he had given the impression that nothing was too good for the business on hand, and even the Central Hall, Westminster, was all too small for what he wanted. Dr. Melville concluded with an amusing suggestion for future festival dinners—namely, that, instead of formal orations the gathering should resolve into a symposium, the speeches taking the form of personal reminiscences. He instanced the pleasure it would have given the company had their President discussed the value of the early morning game of tennis, the Astronomer Royal his personal experiences during the last eclipse of the sun, and Dr. Finzi his Alpine climbs.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the 1926 statistics of four cities:—

Name of district and estimated mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Diarrhœa, &c., under 2 years.	Infant mortality.	Maternal mortality from childbirth.
Liverpool .. .. (849,583)	23·3	13·7	1·47	1·17	3·3	1·1	26·4	104	3·6
Manchester .. (751,320)	18·3	13·2	1·41	1·44	2·9	1·4	16·3	87	4·6
Sheffield .. .. (523,300)	17·2	11·3	0·93	1·19	2·1	1·4	13·6	79	6·0
Leeds .. .. .. (473,400)	17·0	12·8	1·24	1·39	2·3	1·6	18·2	93	5·0

The neonatal mortalities from above downwards were: 34, 34, 37, and 39.

Liverpool.

Dr. A. A. Mussen reports that the infant mortality-rate was 104, as compared with 99 in the previous year, and that the increase is attributable to the prevalence of diarrhœa and enteritis in the central parts of the city. An investigation of the cause again emphasised the importance of breast-feeding. Two cases of plague were notified in August (reported in THE LANCET, 1927, i., 870), but no evidence of plague-infected rats was discovered. Immunisation against diphtheria has been carried out successfully in a number of institutions. In six of them there were 46 cases of diphtheria during the six months before the inoculation, whereas there were only four cases in the subsequent six months. An investigation has shown that in Liverpool 20 per cent. of the juvenile survivors from encephalitis lethargica need institutional treatment. These "conduct" cases are often amenable to a kindly discipline, says Dr. Mussen, and to certify them all as moral imbeciles under the Mental Deficiency Act or to place them among the insane appears to be unjustifiable, though in a few cases this course may be desirable. There is no special institution available in Liverpool, and the number of cases occurring in any particular district is too small to justify the establishment of one. A general meeting of the larger municipalities was called together in November to consider the establishment of a joint institution. Dr. Mussen says that

the further decline in the deaths from alcoholism and of infants from overlying affords "most eloquent testimony to the improved social condition of the city."

The maternity and child welfare centres have been well attended. The births during the year numbered 19,792, and 1668 expectant mothers attended the four antenatal clinics under the control of the Health Committee. Of these 412 were primigravidæ and 1256 multiparæ. The Carnegie infant welfare centre has proved of great value. It provides clinics for infants and expectant mothers, wards for babies who are not thriving, and an educational centre for students of preventive medicine.

The treatment of venereal diseases at the Seamen's Dispensary shows a marked growth; there were 471 new cases in the nine months of 1924 after the opening, 1084 cases in 1925, and 1360 in 1926. The patients are attentive to instructions and take an intelligent interest in their progress. The tuberculosis scheme suffers badly from the lateness of notification.

Five cases of anthrax occurred; one of the patients handled wool in a warehouse, another discharged hides from a vessel, and a third was a "lime-jobber" in a tannery. Two women were manipulating foreign pig hair at the time of infection. Of the five patients two died. Although the death-rate from respiratory diseases was high, a table shows that it was nearly twice as high during the last three decades of the nineteenth century. During 1926 eight cases of dysentery were reported, in addition to three which arrived on shipboard. Dysentery was formerly prevalent in Liverpool, and Dr. Mussen thinks that some of the deaths registered as from diarrhœa are really from dysentery. During the last 30 years there has been an apparent increase in the death-rate from diabetes, but it is suggested that the greater attention recently paid to this disease has led to its more frequent recognition as a factor in mortality. About 70 per cent. of the total births were attended by midwives, including 1471 by the midwives on the staff of the Ladies' Charity. As far as is known no births were attended by uncertified women during the year. Nearly 4 per cent. of the 347 stillbirths bacteriologically examined were found to be due to syphilis. No damage to eyesight from ophthalmia neonatorum has occurred during the past two years. Forty-one mothers with their infants were admitted to St. Paul's Eye Hospital for the treatment of this affection.

About one-third of Liverpool's milk comes from 3840 cows stalled in the city. Among these 20 tuberculous udders were found during 1926. Among the outside cows ten tuberculous udders were discovered. The bacteriologist's report shows that out of 157 samples of milk supplied to the city hospitals 11 contained tubercle bacilli; that out of 81 samples supplied to infant welfare centres six contained tubercle bacilli, and that out of 578 samples taken from milk shops, railway stations, &c., 38 contained tubercle bacilli.

The new houses built numbered 4838, of which 3102 were municipal. This is a great advance on preceding years. The replacement of insanitary houses in the centre has been begun in the Pitt-street area, where 57 tenements are now under construction.

Manchester.

Dr. R. Veitch Clark reports that the scheme of work initiated by the Manchester Committee on Cancer in May, 1926, has proceeded actively. The main line for research is the means of prevention of mule-spinners' cancer. The effects of the various lubricating oils used in cotton-spinning are being studied. The follow up of operation cases shows that 80 per cent. of cases of cancer of the breast were alive ten years after operation. A record is being kept of the histological examination of all tumours dealt with at the Royal Infirmary. A post-graduate course of 12 lectures for medical men on various aspects of the cancer problem has been held. The lectures will be published in book form and distributed to medical men in the neighbourhood.

In spite of continued municipal activity there is no real improvement noticeable in housing, but it is anticipated that the increased rate of building will have a recognisable effect within a reasonable time. Unfit houses cannot be dealt with at present. Three unhealthy areas have been scheduled, which include 1463 houses, but of these it has only been possible to deal with a small area containing 199 houses. The seriousness of the housing problem is emphasised in a special report on housing in relation to childbirth, in which an analysis has been made of the conditions under which 1000 confinements occurred in the working-class districts of Manchester. The outstanding fact revealed was that privacy was only possible in 46 per cent. of the houses occupied by one family and in 2 per cent. of the houses occupied by more than one family.

Since November, 1924, observations have been carried out as to the incidence of sunlight in Manchester as compared with the neighbouring districts of Timperley and Baguley, and since April, 1926, the available ultra-violet rays have been measured. During 1925 and 1926 Manchester only received 59 per cent. and 55 per cent. of the sunlight falling upon Timperley. The regional joint smoke committee is not yet in smooth waters. Very few of the constituent authorities favour the establishment of a united district, and the effort is being made to bring about instead some uniformity of procedure among the various authorities. The reorganisation of the inspectorate which took place at the end of 1925 has proceeded smoothly and realised a large and permanent economy. A large number of special inspectors have been drafted into district work and the staff of disinfectors has been abolished.

At Baguley Sanatorium tuberculin has been used in the diagnosis of doubtful cases, and it is claimed that this procedure has been "of value in eliminating a number of cases that might have been designated pulmonary tuberculosis for the rest of their lives." At Monsall Hospital the treatment of puerperal fever on the lines recommended by the Medical Research Council has been continued. The main lines have been lymph drainage of the uterus, blood transfusion, and the use of arsenical drugs. During 1926 defibrinated blood transfusion was discontinued owing to disappointing results, but a reliable apparatus for whole blood transfusion has now been obtained. In certain cases arsenical drugs have done good. The admixture of iodine with the glycerine used for the local treatment has been persisted in, despite its discontinuation elsewhere. The absence of complications has again been a marked feature of the glycerine-iodine irrigation. Other interesting work carried out at Monsall in connexion with the Dick and Schick tests is described in the report. Of the 474 samples of outside milk examined 49, or 10·3 per cent., proved to be tuberculous. Colonel Brittlebank, the chief veterinary officer, says the increase in tuberculous milk is due in some part to the increased area of supervision, "but it also clearly points to the fact that the Tuberculosis Order, limited in scope as it is, and administered very often in the unsatisfactory manner that it is, provides no protection against infection in the general milk-supply." Nothing is being done, he says, to encourage early notification, and although the discovery of tuberculous milk is generally evidence of widespread infection on a farm, the veterinary surgeon is frequently prohibited from examining all the animals in the herd, and is restricted to dealing with the case notified.

The services of experienced obstetricians have been made available under the puerperal fever scheme. Dr. Clark stresses the fact that puerperal fever shows no tendency to get less, that it is frequently associated with difficulties in labour which call for "an extension of our markedly inadequate antenatal work," and that other needs for its prevention are "more maternity hospital accommodation and more housing."

Sheffield.

Prof. F. E. Wynne says that the most important public health event of the year was the outbreak of small-pox. There have been a few cases in Sheffield in each year since 1921, but the disease did not gain any footing until the last quarter of 1925, when there were 44 cases. Special arrangements were then made by the equipment of the hutment camp at Redmires. During the early part of 1926 the disease seemed to be under control. The notifications in the first four months were 9, 3, 7, and 12 respectively. In May, June, and July the notifications numbered 1, 1, and 3, and then the prevalence began to increase, as there were 6, 13, 19, 31, and 52 notifications during the five months August to December. Dr. Wynne suggests that the rise towards the end of the year coincided with the reopening of the elementary schools, lowered resistance to disease in the industrial districts from the reduction of light, and the congregation of people in the ill-ventilated darkness of the cinemas. No case occurred in a recently vaccinated person. There were no deaths from the disease, although a number of patients were seriously ill and some had very severe eruptions.

The scheme for the conversion of privies made good progress, water-closets being substituted for 1820 of them. The repaving of 1322 yards was completed. The number of houses erected showed a material increase, "but the amount of overcrowding continues to be deplorable." Of 2714 houses erected during the year ended March 31st, 1927, 1752 were municipal. The maternity and child welfare work had outgrown the accommodation in the old premises, and in October the foundation-stone of a new building "with ample accommodation for many years to come" was laid by Sir W. Kingsley Wood. Copies of the elevations, plans, and sections are given in the report. The completed building was opened during the present year by the Minister of Health. A new maternity block with 30 beds has also been opened, and, equipped as it is in a thoroughly up-to-date manner, will be a valuable addition to the maternity and child welfare scheme.

Sheffield has reason to congratulate itself on its tuberculosis scheme. A table in the report shows that of the 16 towns of England and Wales with a population exceeding 200,000, Sheffield had, in 1926, the lowest death-rate from pulmonary and also from all forms of tuberculosis.

The report of the tuberculosis officer, Dr. John Rennie, shows that the dispensary is being well used for consulting purposes. Thus 79 per cent. of the cases notified during the year were sent there before being notified. Again, of the 2203 pulmonary cases dealt with in institutions, 21·3 per cent. were taken in for observation, 54·7 per cent. were at an early stage of the disease, 14·1 per cent. at an intermediate stage, and 9·9 per cent. at an advanced stage. During the year arrangements were made with the guardians to take over all cases of tuberculosis of the lung under their care, and a block of 60 beds for male patients has been allocated for this purpose. There are now 446 municipal beds available for all ages and both sexes of patients, in addition to the 130 beds for surgical tuberculosis at King Edward VII. Hospital. The X ray apparatus at the dispensary is now regarded as indispensable, both for diagnosis and as a record of the chest condition, and 1709 skiagrams were taken during the year. Dr. C. L. Pattison, the surgical tuberculosis officer, reports that the children admitted to his hospital spend a shorter time there, and that in consequence some of the beds are available for areas outside Sheffield. The shortened stay is partly due to improved methods of treatment, but much more to the valuable coöperation of the medical men of the city in sending in the children at an earlier stage of the disease. In 1919 the average duration of stay in hospital was 731 days. In 1926 it was 252 days.

About one-third of Sheffield's milk is produced by 2600 cows stalled in the city. Amongst these, 32 cows with tuberculous udders were found by veterinary inspection during 1926. Rather more than two-thirds of the milk comes in by road and rail from presumably about 6000 cows. Amongst these, by the much more unsatisfactory method of following up tuberculous milk samples, the Sheffield veterinary inspectors found 48 cows with tuberculous udders.

Of the 993 samples of mixed milk examined during the year 64 were found to be tuberculous. The number of tuberculous udders discovered by the Sheffield scheme both inside and outside the city during the last five years were 71, 72, 75, 79, and 80.

Leeds.

Dr. J. Johnstone Jervis reports that there was a fall both in the deaths and the notifications from tuberculosis as compared with the previous year, but that the figures are still much too high. The reorganisation of the scheme is nearing completion. There is need for more sanatorium beds, however, especially for surgical tuberculosis, and the acquisition of the Elmet Hall estate should make it possible to meet this need. The accommodation in the municipal institutions at Killingbeck and Gateforth is for 220 and 50 respectively; and "The Hollies" sanatorium school for children from infected homes and children with signs of early infection has accommodation for 40 more. Dr. Jervis complains much of the lateness of notification. He would also like to see municipal houses provided at a low rental for families attacked by tuberculosis. It is hoped to add to the scheme the advantages of X ray apparatus, artificial sunlight, and dental treatment. Coöperation with the school medical department has been improved, but closer coöperation between the infirmary and the tuberculosis dispensary is needed, especially in the field of surgical tuberculosis. The notifications during the year numbered 1460, 1299 being pulmonary cases, but only 404 new "contacts" were examined at the dispensary.

"The housing riddle," writes Dr. Jervis, "remains unsolved," and in spite of the erection of 8000 houses since the war, and the opening out of new housing estates, there are no signs of an upward movement of the population or of relief of the congestion in the older central parts of the city. During 1926 2065 new houses were erected, of which 1784 received State assistance. The municipal houses numbered 780 and are, practically speaking, the only ones built for letting. It is intended to build 40 municipal houses with either gas or electricity as the only form of heating. Eight of these were erected during the year. The West Riding Regional Smoke Abatement Committee sent out a final report to the constituent authorities, and nearly half of the latter have adopted the report in its entirety. Nine of the constituent authorities have decided to provide instructional courses for stokers. The possibility of having an efficiency test for stokers was under consideration, but presents many difficulties. An agreement has been made with the Halifax Corporation whereby the expert services of its smoke inspector will be placed at the disposal of any local authority in the area who desires them. Dr. Jervis regrets that cremation makes such slow progress in Leeds. A table shows that the average number of cremations during the past five years was 18; the corresponding figures for Liverpool and Hull were 76 and 47 respectively. In discussing the matter he refers to the forlorn, dilapidated, and ugly condition of the graveyards in the city. It may be pointed out, however, that many of the graveyards in London have been made beautiful and that the same might be possible in Leeds.

The shortage of hospital accommodation has been mentioned in previous reports. Arrangements have now been made by the guardians for the admission of paying cases to St. James's Hospital, and plans for an up-to-date maternity hospital have been approved.

The 2016 cows stalled in the city are inspected monthly by the veterinary surgeon. Amongst them nine cases of tuberculosis of the udder and six of generalised tuberculosis were found during the year.

Forty-eight samples of outside milk were examined for tubercle, which was found in five of them. The follow-up was only successful in two out of the five cases in tracing the source of infection at the outside farm. The revision course arranged for the midwives at the Leeds Maternity Hospital was repeated this year, but only four midwives attended. Stillbirths during the last decade have averaged 4·3 per cent. of the total births. There are 18 infant welfare centres all managed by the Leeds Babies Welcome Association, and at 15 of them antenatal consultations were held, which were attended by 1658 expectant mothers during the year. The facilities for the provision by the corporation of the services of an obstetric consultant were only used by medical practitioners on 13 occasions at a cost to the corporation of £43.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 12TH, 1927.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 258 (last week 219); scarlet fever, 2016; diphtheria, 1316; enteric fever, 146; pneumonia, 892; puerperal fever, 43; cerebro-spinal fever, 8; acute poliomyelitis, 19; acute polio-encephalitis, 2; encephalitis lethargica, 13; dysentery, 8; ophthalmia neonatorum, 92. There was no case of cholera, plague, or typhus fever notified during the week.

Of the 146 cases of enteric fever 58 were notified from the county of Hertford, 48 being from Hemel Hempstead (U. and R.D.), and 9 from Watford (R.D.) (see also p. 1159).

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 3 (2) from enteric fever, 31 (8) from measles, 6 (0) from scarlet fever, 13 (4) from whooping-cough, 24 (8) from diphtheria, 67 (17) from diarrhœa and enteritis under two years, and 47 (8) from influenza. The figures in parentheses are those for London itself. The third death from enteric fever occurred in Bristol. The number of stillbirths registered during the week was 249 in the great towns, including 28 in London.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdr. A. G. Taylor to be Surg. Comdr.

The following appointments are notified:—Surg. Comdrs.: G. W. Woodhouse to *Victory*, for Haslar Hospl., and as specialist in anæsthetics; and R. N. W. W. Biddulph to *Pembroke*, for R.N. Barracks, Chatham. Surg. Lieuts.: M. B. Devane to *Pembroke*, for R.N. Barracks, and to *Calliope* (on completing for trooping), and to *Sandhurst* (on arrival on station); R. L. G. Proctor to *Dryad*; and E. V. Barnes to *Calliope*, for duty on voyage home (on relief).

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: J. M. Ryan, L. S. C. Roche (Prov.), A. R. Oram (Prov.), and C. L. Emmerson. J. D. Cooper to be Temp. Lt.

TERRITORIAL ARMY.

Lt. J. R. Griffiths to be Capt.

INDIAN MEDICAL SERVICE.

The undermentioned relinquish their temp. commns. and retain their rank: Temp. Capts. Bantwal Panduranga Baliga, Dhirendra Chandra Mazumdar, Joy Devananda Sinha, and Pyare Lal Dube.

The undermentioned relinquish their temp. commns.: Temp. Capts. Krishna Das Mukharji, Chandrian Krishna Row, Atul Krishna Kar, Dara Hormusji Bharucha, Shamsul Haque Wali Mohomed Siddiqui, and Des Raj Nayar.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—This institution is about to be further extended. An electrical treatment block was opened a year ago, and the present extension will consist of wards superimposed upon it, each containing 26 beds. There will also be three single-bed wards.

Correspondence.

"Audi alteram partem."

CRIMINAL RESPONSIBILITY:

MEDICO-LEGAL DIVERGENCE.

To the Editor of THE LANCET.

SIR,—The medical profession must be grateful to Lord Hewart on his delivery of the Lloyd Roberts lecture for his very lucid and logical exposition of the attitude of the criminal law towards insanity. Medicine and law find agreement difficult in this complicated theme. Law is the fruit of ages of human experience, and its maxims are arranged in as logical a manner as may be for the regulation of human conduct. It is, however, in this logical systematisation that psychological medicine finds its stumbling-block. The instance given by the lecturer of the man who is morbidly jealous, develops delusions, kills his wife, and endeavours to conceal his crime is a good one of the divergence of views taken by the lawyer and the physician. The lawyer thinks the killing should not be with impunity. The killer knew what he was doing and no doubt was in possession of knowledge that to kill under such circumstances is to murder. He is therefore in the view of the law to be punished. The physician, on the other hand, is unable to take up so "logical" an attitude or to express so precise a judgment. Anyone with experience of the mentally afflicted has met a case in which the patient suffers from a quality of jealousy which is utterly unreasonable, is not by any known means to be diverted or rectified, takes possession of and entirely vitiates the whole personality and renders him a noisome automaton. Such a patient may "know" what he is doing and "know" that he is doing wrong, but cannot be held to be capable of exercising a normal control over his actions. Similarly, in numerous other analogous but less marked instances the physician learns from his experience of the insane that power of control is in them so often diminished by disease that, though with full knowledge of what they are doing and of the consequences of their acts the patients cannot be held as responsible for their actions as are the sane. It is impossible satisfactorily to bring all insane conduct leading to acts of violence or other wrongdoing within the logical scheme of the answers of the judges given in the inquiry arising upon the McNaghten case. It is, of course, not for the medical witness in a court of law to pronounce any opinion on the responsibility of an accused person, but it is entirely proper that our views in such matters should be insistently laid before the lawyers on all other appropriate occasions.

I am, Sir, yours faithfully,

E. D. MACNAMARA.

Harley-street, W., Nov. 19th, 1927.

THE NUTRITIVE VALUE OF BREAD.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Nov. 19th (p. 1093) Drs. Cramer and Mottram write: "It is to be regretted that on the basis of these faulty experiments Prof. V. H. Mottram, in whose laboratory these experiments were carried out, should have published in popular writings the erroneous statement that white bread contains an abundant supply of vitamin B and is not greatly inferior in this respect to wholemeal bread or germ bread, and that as the result of this propaganda this error should have been widely accepted."

May I quote my most recent "popular writing" (*The Nation and Athenæum*, Oct. 15th, 1927), one paragraph of which reads: "The arguments put forward for the use of brown bread instead of white are: that it contains more protein, that its protein is of better quality, and that it yields more mineral matter, more roughage, and more vitamin B. I think that each of these statements is unassailable, and at

the first sight the case for brown bread would appear overwhelming . . . ."

And may I further quote—I hope that the quotation will not be too long for the correspondence columns of THE LANCET—from my other recent "popular" account ("Food and the Family," James Nisbet and Co., second edition, 1926) on the same controversy :—

"*Bread.*—Naturally the first [food] which claims attention is bread, the so-called 'Staff of Life.' Probably it gets that name because every class in society eats so much of it, and because the poor find in it their mainstay. The best that we can say for bread, of any sort or description, is that, as a source of calories, it is cheap. That is why the poor eat it. Further, its flavour, such as it is, is one of which the palate does not easily tire. Bread dilutes the stronger flavours of meat and cheese, and it has an agreeable texture. Whether brown or white it contains vitamin B. These are the sum total of its good qualities. Otherwise it is a poor food *except in conjunction with other foods.* Alone it has too little and too poor protein. Animals grow but slowly upon it, and the stunted growth of the slum child is probably in part due to the poverty of building material in bread. There is no vitamin A nor vitamin C in it, and it leaves an acid ash. Therefore it needs to be fortified by animal protein (meat, fish, milk, or eggs); by fat (preferably containing vitamin A—e.g., butter); by fruit and vegetables for basic mineral substances and vitamin C. White bread contains no roughage.

"Nor is brown bread much to be preferred above white. It has a cleaning effect on the teeth, wherefore dentists recommend it above white; it contains roughage—too much for some people; and it has more vitamin B than white bread. Probably its proteins are a little better, for the male rat asserts his right to a greater stature than the female upon brown bread, upon white he cannot. In these slight superiorities over white there is no basis for the agitation to prevent the use of roller-milled and screened flour which some enthusiasts are raising. Used as a source of calories in a good mixed diet, with meat, milk, vegetables, and fruit, there is no reason to discard white bread. Only, perhaps, when the choice of foods is severely restricted by economy, and bread has to be relied on as the main source of energy, should brown bread be necessarily preferred to white. Otherwise the decision may be left to fancy."

Anyone who had had the patience to read thus far and to compare what Drs. Cramer and J. C. Mottram think I said and what I have actually said must hope that their scientific accuracy is greater than their controversial.—I am, Sir, yours faithfully,

V. H. MOTTRAM.

Neville's Croft, Potters Bar, Nov. 21st, 1927.

To the Editor of THE LANCET.

SIR,—Dr. Cramer and Dr. J. C. Mottram have subjected some work of mine [1] to criticism, based on, as it seems to me, incorrect reading. No one can object to scientific criticism of scientific work, but it is another matter when the criticism is based on careless reading of or upon misrepresentation of what was actually written and done.

To take one example, they state "This experimental arrangement is obviously faulty, because it does not provide for any controls to show that vitamin B may not have been supplied by the only other article of this diet—namely, butter." Now this control actually was made. In five experiments (12 animals in each experiment) the animals were kept on screens to prevent their obtaining any vitamin B from excreta, and in one of these experiments lasting ten weeks, the only butter-fat they received was "rendered"—i.e., "stirred with hot water until melted and the fat, when cold, allowed to drain through muslin and then pressed as free as possible from liquid." Such washing of the butter is held to remove its vitamin B. The growth-rate of the animals was the same as before. Clearly the samples of bread used must have contained some vitamin B or symptoms of its lack would have appeared in 70 days. Drs. Cramer and Mottram must have omitted to read this portion of the paper.

As far as I know, I have never stated that "white bread contains a considerable amount of this vitamin," and that "the addition of yeast gives to white bread the relative high vitamin B content"—opinions with which Drs. Cramer and Mottram credit me. Further, they say of my experiments: "the rats kept on baking-powder bread and butter showed good growth," while I merely said "the rats fed on baking-powder bread did not thrive as well as the others," and in other experiments that "the growth was slow."

It is obvious that Drs. Cramer and Mottram have misquoted me and so given entirely the wrong impression of the findings of my work, which goes to show that the sample of baker's bread which I was using in these experiments contained enough vitamin B to supply the needs of the rat.

It is true that there are discrepancies between the results of Drs. Cramer and Mottram's and my own experiments, but these discrepancies can be easily understood and explained by anyone familiar with the current literature on the relation of vitamin B to the protein of the diet.

I am, Sir, yours faithfully,

GLADYS HARTWELL.

King's College for Women, Household and Social Science Department, Kensington, W., Nov. 22nd, 1927.

[1] Biochem. Jour., 1924, xviii., 120 and 1323.

RESIDUAL URINE IN PROSTATIC ENLARGEMENT.

To the Editor of THE LANCET.

SIR,—Many of your readers must have read Sir Cuthbert Wallace's Bradshaw lecture with much satisfaction and with great appreciation of the critical attitude with which he regards the problems of the surgical treatment of the enlarged prostate. His explanation of the mechanism by which residual urine comes to remain in the bladder after the act of micturition, however, I should like to refute.

When the healthy bladder contracts its cavity is completely obliterated; as a space it ceases to exist. A single muscle-fibre can only in action contract to a certain fraction of its length. If it be stretched the maximal physiological shortening fails to occur. Hence it comes about that the dilated bladder of the prostate loses its power of reducing its internal capacity to nothing. After the greatest effort there is still a space which contains residual urine. That this is the explanation can be demonstrated by a simple experiment. If, after the patient has attempted to empty his bladder, a soft rubber catheter be passed a certain volume of urine will be drawn off. If now a silver catheter be inserted a further quantity of urine will come away. In this second case the tip of the catheter impinging upon the apex of the bladder will fix it. The power of activity left to the muscular wall will now be sufficient to enable it to contract snugly around the shaft of the instrument, thereby squeezing out more of the contents. Without such assistance its maximal contraction will still leave a bladder space unobliterated. This mechanism explains why the bladder will be emptied by a metal catheter, even when the eye is at the highest point of its cavity, as is usually the case with the patient lying upon his back.

The amount of residual urine is thus a measurement of the degree of stretching that the bladder has undergone and becomes of supreme importance. For when it amounts to about 4 oz. the areas of the ureteric sphincters are so expanded that the sphincters become incompetent. Then it is that at every act of micturition the intravesical pressure, far greater than the secretory pressure of the kidney, can be and is transmitted upwards along the ureters to the kidneys themselves. In this sense the term "back pressure" is applicable and expressive. This hypothesis would

seem to be more plausible than that of Sir Cuthbert Wallace, who assumes that the damage to the kidney is due to renal secretory pressure, which would only be tenable if the pressure of urine in the bladder were continuously raised (which it is not) or the sphincter of the ureter went into continuous spasm for which there is no evidence.

Surgeons will thank Sir Cuthbert Wallace for his remarks upon the propriety of distension for the arrest of hæmorrhage and his suggestion that the merits of the open operation should be reconsidered.

I am, Sir, yours faithfully,

Surrey, Nov. 22nd. CHARLES A. PANNETT.

TREATMENT OF ENCEPHALITIS LETHARGICA: A SUGGESTION.

To the Editor of THE LANCET.

SIR,—The very multiplicity of remedial measures advocated for the treatment of "sleepy sickness" indicates that the therapy of this disastrous disease is in a very unsatisfactory state. This is undoubtedly the case even though, to judge from the literature, beneficial results are occasionally obtained by the use of sodium salicylate, mercurochrome, hexymethylenamine combined with sodium acid phosphate and a few other remedies, amongst them a serum. One hesitates to add to the number of drugs which have been tried in, or suggested for, the treatment of the acute stage of the disease, but, when the results are so unsatisfactory and the sequelæ of the malady so grave, both from the individual standpoint and that of the public health, it is perhaps justifiable to advance an argument in favour of a trial of potassium permanganate intravenously. I am encouraged to do so by the fact that there would certainly seem to be some basis for the use of this substance.

Many years ago Dreyer in Cairo showed that the external application of solutions of permanganate of potash is of marked benefit in small-pox. I drew attention to the matter in 1922 (THE LANCET, 1922, ii., 1193) and, at a meeting of the Army Pathology Committee, discussed the question of the action of permanganate in this disease with Dr. Mervyn Gordon. At a later date Dr. Gordon published an account of his interesting work on vaccinia and variola and showed that potassium permanganate, in a dilution of 1 in 100,000, is capable of destroying the virus of that disease and that it can also destroy the virus of variola at a dilution of 1 in 10,000.

There is good reason for believing that the virus of encephalitis lethargica has a certain affinity, probably a close one, with the viruses of vaccinia and variola as well as with the herpetic virus. This being so, it occurred to me some time ago that potassium permanganate might possibly be capable of acting upon the virus of encephalitis lethargica. It seemed clear, however, that it could only do so if it were administered intravenously and, from the nature of the drug, I very much doubted if it could be given by this route.

With a view to determining its action when given by the vein I asked Dr. H. H. Scott if he would carry out some experimental work on rabbits. He very kindly did so, but had to abandon his investigations on being appointed pathologist to the Zoological Society of London. The few data which he collected did not seem to me to warrant a trial of the drug in cases of encephalitis lethargica, and the matter fell into abeyance for the time being. Now, however, I see from the *Indian Medical Gazette* for September, 1927, that J. H. Theodore, I.M.S., military assistant surgeon at the King Institute, Guindy, impressed by the value of permanganate of potash externally in small-pox and by the work of Gordon on vaccinia, has been testing the efficacy of the drug in vivo as a means of destroying the viruses of vaccinia and variola. After experiments on the intravenous injection of permanganate of potash in rabbits and after finding that, given in this way, the drug appears to exercise a specific and favourable effect on vaccinia in these animals, he proceeded to administer it intravenously in small-pox cases. So far he has only treated three cases in this way, proceeding with great and commendable caution. Naturally no conclusions can yet be drawn as to its efficacy in small-pox, but he has shown that the drug can be safely administered to human beings by the intravenous route, at least in doses of 10 c.cm. in a 1 in 500 solution. A single dose only was given in each case, but he considers that the maximum dose which could be tolerated is probably much in excess of that employed, a conclusion which seems justifiable, as he gave the same doses to his small-pox patients as to his vaccinated rabbits. In the doses he employed potassium permanganate administered intravenously exhibited no toxic properties.

It is of interest to know that Dr. Theodore tested the effect of 10 c.cm. of a 1 in 500 solution of permanganate of potash on himself before administering it to his small-pox patients. He found that it did not affect either liver or renal efficiency. As, therefore, this form of medication can, judging from Theodore's results, safely be employed in man, I think, for the reasons stated, that it might be tried in encephalitis lethargica, especially perhaps in cases where other remedies have proved futile or of little use. I am endeavouring to have such trials carried out and, at a later date, trust it may be possible to report upon them.—I am, Sir, yours faithfully,

London School of Hygiene and Tropical Medicine, Nov. 21st. ANDREW BALFOUR.

ORGANIC HYPNOTICS.

To the Editor of THE LANCET.

SIR,—In an Editorial note following our letter on page 1101 of last week's issue of THE LANCET it is stated, "These drugs have been placed on a statutory list of dangerous drugs." We should like to point out that the statutory position of Dial and barbituric acid derivatives generally is that they are legally regarded as Part I. Scheduled Poisons. The suggestion that they have been placed on a statutory list of dangerous drugs will cause your readers and the profession generally to assume that Dial is legally classed as a Dangerous Drug.

We are, Sir, yours faithfully,

Nov. 18th. THE CLAYTON ANILINE COMPANY, LTD.

*** We have received a similar representation from the Hoffmann-La Roche Chemical Works, Limited, but we are unable to agree that the use of the words "dangerous drugs" (not Dangerous Drugs) in our Editorial note would mislead professional readers. They would presumably know that neither the Dangerous Drugs Acts of 1920 and 1923 nor the Regulations issued thereunder contain any definition or statutory list of dangerous drugs so-called. We are surely entitled to speak of a poison as a dangerous drug when the Dangerous Drugs Acts themselves deal with the sale of poisons under the Pharmacy Act as well as with the restrictions on the possession, &c., of raw, prepared and medicinal opium.—ED. L.

EXTENSION OF THE MILLER GENERAL HOSPITAL.

To the Editor of THE LANCET.

SIR,—In reference to your note on p. 1083 of last week's issue may I say that our extensions, *which we are just taking into use*, consist of: 1. A new ward block containing three fine wards of 24 beds each, with two private rooms for paying patients on each floor. In the basement there is a dining-room and a class-room for the nurses, a servants' dining-room, a new main kitchen, larders, cold storage and ice-making plant, store-rooms, &c. The roof has been designed for giving open-air treatment with a shelter for use in inclement weather. 2. The first part of a nurses' home which will contain 73 bedrooms. The two buildings are costing £100,000, towards which King Edward's Hospital Fund have promised us £16,000 when the remainder (which now stands at £22,000) has been raised.—I am, Sirs, yours faithfully,

HARRY A. BONE,

Greenwich-road, London, S.E., Nov. 18th. Secretary

Obituary.

GEORGE COWELL, F.R.C.S. ENG.,

CONSULTING SURGEON TO THE WESTMINSTER AND THE ROYAL WESTMINSTER OPHTHALMIC HOSPITALS.

WE regret to announce the death of Mr. George Cowell, which occurred at his residence in Nevern-square, London, on Nov. 18th, at the great age of 92. He had outlived all his contemporaries, but to the end maintained a large circle of friends within and without the medical profession, generations of the former having been his pupils or having served with him as his juniors in various capacities.

George Cowell was the son of an Ipswich surgeon of the same name and was born in the last year of the reign of King William IV. After serving articles to a practitioner in Birmingham, as was the method of joining the medical profession in those days, he entered St. George's Hospital as a student, and held minor and residential appointments under Gray, the anatomist, Prescott Hewett, and Timothy Holmes. In 1858 he took the diploma of M.R.C.S. and shortly afterwards was appointed surgeon to the Saints George and James Dispensary. At the same time he became clinical assistant at the Moorfields Hospital, where he studied his special branch of surgery for ten years, though he remained for a long period a general surgeon like other ophthalmologists of his date. In 1867 he took the Fellowship of the Royal College of Surgeons of England and was shortly afterwards appointed assistant surgeon to the Westminster Hospital, with which institution he was connected until the day of his death, that is for no less than 56 years. Throughout the whole time he served the charity nobly. He lectured at the hospital on surgery for 20 years, and being promoted full surgeon in 1878 held that post until he was appointed consulting surgeon in 1896. The period covered the rebuilding of the out-patient department, the medical school, and the chapel, with all of which work he was closely associated. He was Dean of the school for five years, and at the expiration of this office he became treasurer of the hospital and held that post for a further 15 years. While still assistant surgeon to the Westminster Hospital he was appointed surgeon to the Royal Westminster Ophthalmic Hospital, a post which he held for 27 years; and here again not only did he give his scientific services but he took an active interest in the management of the institution.

Next to his work as an ophthalmic surgeon, and closely associated with that work, must be mentioned Cowell's activities in behalf of children. In 1866 he was the virtual founder of the Victoria Hospital for Children in Chelsea, and for 20 years he was associated as surgeon and ophthalmic surgeon with the new institution. During the same period he found time to hold the appointment of surgeon to the East London Hospital for Children, and also to lecture on surgery and ophthalmology at the School of Medicine for Women founded at the Royal Free Hospital in 1874.

As an author Cowell is well represented by his clinical addresses, and by the many papers contributed to the reports of St. George's Hospital, Westminster Hospital, and the Westminster Ophthalmic Hospital, while special reference must be made to his lectures which were published in THE LANCET at various periods from 1880 to 1887. The greater part of his writing consisted of notes on surgical procedure and records of special operations; these were published in various medical journals as well as in our columns and show the wide range of their author. He also was the author of "The Life and Letters" of his relative, Edward Byles Cowell, the well-known Oriental scholar.

It was natural that Dr. Barnardo should turn to Cowell for assistance when the well-known Homes for neglected children were founded, and no medical man did more than he for the establishment of this fine philanthropy upon sound grounds. No doubt its religious side had particular attraction for him as he was a zealous supporter of the Guild of St. Luke, and except for the Rev. Canon Henry Arnott was at his death the senior brother of the Guild; on the chronological roll of the Fellows of the Royal College of Surgeons of England Cowell's name stands second and Arnott's fourth.

Mr. W. G. Spencer writes of his old friend: "I had the honour of being Cowell's colleague at the Westminster Hospital, but when I was elected he had already been senior surgeon and the senior on the medical staff for many years. It was well known that he had headed the efforts of the staff in all the various improvements at the hospital and in the medical school, of the history of which he possessed profound knowledge. Soon after my appointment he called a meeting at his house, at which the late Charles Stonham and I were invited to express our opinions. Mine, naturally, were those which I had picked up during six years of work at St. Bartholomew's, and I remember Cowell's courteous attention, intent on making the machine work smoothly, as it did, until his retirement nine years later. In general surgery he was level with his day; he accepted Lister's methods without attempting to extend the scope of surgery which those methods facilitated. Indeed, the special attention he had devoted to ophthalmic surgery disposed him to smaller operations and finer manipulations. I had watched Henry Power and Bowater Vernon when operating for cataract, as I did subsequently Cowell, and I think that his handwork was not then to be bettered. After retirement from the active staff he attended hospital committees as a vice-president, at first regularly and then with decreasing frequency, and the last occasion occurred when he led the medical staff at the service in the Abbey commemorating the reopening of the hospital after alterations in July, 1924."

George Cowell was, as this brief notice shows, a learned and conscientious man, whose high standard of living and devotion to duty enabled him to act as a pioneer in good works and to offer firm support to colleagues in the discharge of joint responsibilities.

He married late in life Elizabeth, widow of Dr. Hamilton Roe, and daughter of Mr. John Laurie, M.P.; there were no children and his wife predeceased him.

JONATHAN DALGLIESH, M.R.C.S. ENG.

Dr. Dalgliesh, who died at Newcastle-on-Tyne on Nov. 9th, was born in 1839, and was educated at the Newcastle College of Medicine. He spent most of his life in his native city, for after a short period in London, where he qualified as L.S.A. and M.R.C.S. in 1862, he returned to the North to practise as assistant to Dr. Raine and later to Dr. Frederick Page. At the time of his marriage he set up in practice by himself and he remained continuously at work in various parts of the city until 1901. In that year he retired and went to live at Harrogate, but on the death of his wife soon afterwards he returned to Newcastle, and for 11 years carried on, single-handed, a medical mission at Shieldfield. A serious illness followed, but soon after the war broke out Dr. Dalgliesh was well enough to return to practice once more to take the place of a younger man, and gave much useful help, especially as an anæsthetist to Newcastle practitioners and hospitals. Even after his final retirement in 1919 he took a great interest in medical work and progress, and he acted as public vaccinator until 1921. We have received the following appreciation which speaks further to his personal qualities: "He was a most energetic man and a real doctor; the best type of general practitioner, always anxious to relieve suffering and cure disease, and as anxious to learn and improve his knowledge of the science and art of medicine and keep abreast of the times. He was most self-denying and never weary; I never once heard him say that he was tired, and he would cheerfully work day and night in times of epidemics. His generosity was as great as his courage, and it was always his earnest desire to promote peace and happi-

ness among those around him. Surely he can say with St. Paul, 'I have fought a good fight.'" During the last few years of his life he suffered from failing loss of sight and hearing, and these disabilities, though he bore them with patience, were a considerable trouble to him, for he had drawn much pleasure from books.

Of Dr. Dalgliesh's five sons, the second, Dr. C. A. Dalgliesh, was an ophthalmic surgeon in Sunderland and died in 1910. His eldest son is Dr. J. W. Dalgliesh, of Sutton. He leaves three daughters.

WILFRID WILLIAM PEARSE, M.D. ABERD., D.P.H.

Dr. W. W. Pearse, late medical officer of health of Hong-Kong, was a Devonshire man, his father being a physician before him. He received his medical education at the University of Aberdeen, where he graduated as M.B. in 1893 and took the D.P.H. in 1894. After qualification he travelled extensively in the East and eventually joined the Colonial Medical Service. He held the appointment of assistant medical officer of health at Hong-Kong for several years before his promotion to the senior post, and during this time he devoted considerable attention to antiplague work; his thesis for the M.D. in 1906 was on the subject of bubonic plague, and was classed as the best of the year. During the late war Dr. Pearse joined the Royal Army Medical Corps, returning to England via Siberia for the purpose, an eventful journey in those times of difficult travel. He saw service in France, and at the conclusion of hostilities resumed his work in Hong-Kong. On reaching the age-limit, he retired in 1926, after nearly 25 years' service in the Colony. The Chinese staff gave him a picturesque farewell dinner and he received many gifts from friends and colleagues. He was a man of unusual ability, whose learning was deep and curious. He read widely, was an accomplished linguist, and took a keen interest in microscopy and bacteriology. His knowledge of public health, especially in the Far East, was excelled by few, and it was only his extreme modesty and dislike of publicity which prevented his becoming well known in this field of work. His talents were eminently adapted for research, but he was not given facilities by the Hong-Kong Government, and thus the greater part of his time was devoted to the varied activities of the sanitary department, to the loss of epidemiological science. He put all his energy into bringing his department to a high state of efficiency, and it represented his life work, for his long service in the tropics undermined what had been a strong constitution, and he left Hong-Kong with little hope of regaining his health.

Dr. Pearse, whose death took place at Villefranche-sur-mer on Nov. 11th, had many friends who will deeply regret his untimely death. He leaves a widow and young daughter.

JOHN CARLYLE JOHNSTONE, M.D. GLASG.

Dr. Carlyle Johnstone, whose death is announced, was for many years medical superintendent of the Roxburgh District Asylum at Melrose, and though he had lived in retirement at Droitwich for some years, was well remembered in the North by a large circle of old colleagues. He was visiting a medical friend at Edinburgh at the time of his death, which came unexpectedly and suddenly. Born at Hobkirk, in the county of Roxburgh, in 1855, he was educated at private schools in England, Dumfries Academy, and the University of Glasgow, where he graduated in medicine in 1877 with distinction in most of his medical classes, having gained five medals. In the following year he was appointed assistant medical officer at the Fife and Kinross Asylum, and in 1880 he became assistant physician to the Royal Edinburgh Asylum, under the late Sir Thomas Clouston, whom he assisted in the preparation of his "Clinical Lectures." In 1885 he went to the Roxburgh District Asylum as medical superintendent, and there he remained until 1917, when he resigned on account of ill-health. During the period of his control the institution expanded considerably; fresh land was purchased, a new and satisfactory water-supply was obtained, and electricity was installed.

Dr. Johnstone was greatly interested in the nursing of the insane and devoted much energy to training his nursing staff. He was partly instrumental in securing the passage of the Act under which service in the Scottish District Asylums became pensionable, and he drew up a scheme of practical training for those engaged in mental nursing, which was found useful in other institutions. He also took an active part in the work of the local division of the British Medical Association, and was elected by the county council as a medical member of the Roxburgh County Insurance Committee. A few months after his resignation Dr. Johnstone was sufficiently restored to health to take up work under Dr. G. M. Robertson, as junior assistant physician at Craig House Mental Hospital, and he remained there until some months after the Armistice. His private interests were chiefly literary and artistic. A man of wide reading he was unassuming in character and averse to the limelight. "He was always ready," writes a colleague, "to place his experience and knowledge at the disposal of anyone who sought his advice and guidance, and his best memorial is the institution which he served so long and so well, and which under his able management became a model of what such an institution should be."

Dr. Johnstone is survived by his wife, a daughter of Deputy Surgeon-General Andrew Fleming, of the Bengal Army, and by a son and daughter. His son is at present medical officer of health at Nairobi in Kenya.

HOUSEKEEPING IN INSTITUTIONS.

THE task of catering for an institution of any kind, be it hospital, school, nursing home, hostel, or Poor-law institution, if it is to be well done from the health point of view and yet cheaply, calls for special preparation and high qualifications on the part of the woman who undertakes it. In a pamphlet entitled "The Reform of Institutional Housekeeping: A New Career for Women," which has been issued by the Food Education Society (24, Tufton-street, London, S.W. 1), Mr. C. E. Hecht outlines the dietaries which now obtain in hospitals and nursing homes, boarding schools, and hostels, and goes on to describe the steps which the Society has taken since 1910 to improve the situation. America and Canada, he points out, have gone much further than this country in training women to hold posts as dietitians in institutions. Several leading hospitals only accept candidates who hold a degree in household science, and this involves an academic training of four years, followed by a professional training, usually of six months, in the dietary department of a hospital. The result of employing these dietitians has given great satisfaction to the boards, the medical staff, and to the patients. Mr. Hecht considers that in England the problem of feeding in the hospitals has not yet received much attention and that the people into whose care it is entrusted are not experts. He recognises improvements of late years; since 1925 the Metropolitan Asylums Board have only appointed fully trained and experienced women to act as kitchen superintendents in their hospitals; facilities for training women are also afforded in many schools, notably by King's College for Women, which offers a three years' course in institutional administration; the University of London, too, grants a degree in household and social science. Yet qualified women are far too seldom employed, and he suggests that governors and committees of hospitals, schools, and other institutions must be made to realise that the presence of an educated and highly trained woman makes for efficiency and economy as well as the health of the residents. As a considerable time must elapse before reform on a large scale comes into force, it is suggested that post-graduate courses in dietetics should be arranged for hospital matrons, heads of schools, homes, residential halls, and other institutions, as well as for housekeepers and cooks.

ROYAL HALIFAX INFIRMARY.—A gift of £10,000 has been received from Mr. Ernest Shaw Redman for the provision of two open-air wards and the building and equipment of a pathological laboratory.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.

NEW OUT-PATIENT AND ELECTRICAL DEPARTMENT.

ON Tuesday last Prince Henry, President of the Royal National Orthopædic Hospital, received the guests at the formal opening of the new out-patient department by the Lord Mayor of London. A preliminary religious service was conducted by the Dean of Westminster. In welcoming the Lord Mayor, Prince Henry assured the company that the new building was already entirely paid for, and had been erected with a stern eye to economy. It had not come too soon, for in 1908, when the main buildings had been opened, the annual number of out-patients had been 11,000, and the aim had been to provide for 20,000. Last year the number had approached 78,000. The decorations marked a new era, in which patients were to be cheered by beauty instead of depressed by the gloom of a railway station waiting-room.

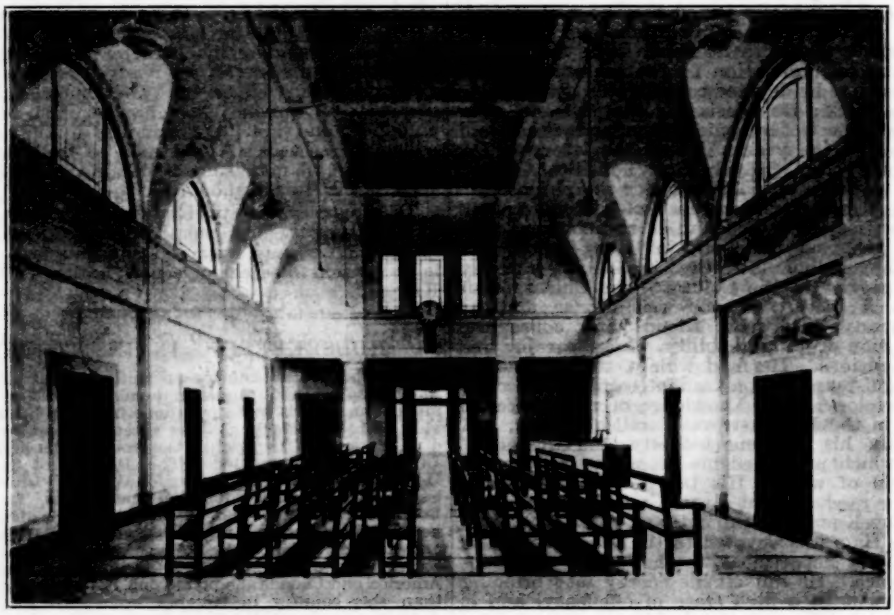
The Lord Mayor, in reply, complimented the hospital on its success and on the work it did for middle-aged patients as well as children. After he had declared the new buildings open, the President and guests made a tour of the various rooms, and saw patients at exercise in the gymnasium, clad in their purple tunics.

The New Waiting-room.

The extension, which is approached through a new main entrance in Bolsover-street and a wide bright corridor, centres round a large and attractive waiting-room. Broad mahogany doors lead to the various departments through five bays on each side of the hall and two at the far end. Below the mid-line of the bays the colour is dark ivory; above it is light ivory. Above the doors in each bay are paintings representing the months of the year, the work of Miss Nan West, a young artist trained at the Slade School. A big panel representing a picnic scene, "June and July," is at the far end of the room, between the two doors. The medium is a washable wax, and the execution is consistently gentle, with a quiet gaiety; a fitting expression of the desire for hopeful and happy patients. Above the frieze the roof is coved, and the cove is broken by large semi-circular windows above each of the ten side bays, which are separated by pillars. The lighting is by opal electric globes, suspended opposite each window space.

The Treatment Rooms.

Off the waiting hall are the consulting and dressing rooms, an operating theatre for minor operations, and sterilising, anæsthetising, plaster, and recovery rooms. Leading from the hall is a corridor which gives access to rooms in which patients are measured for and fitted with surgical boots, instruments, &c. The exit is from the further end of the hall and leads into Euston-road, so that cross traffic within the hospital is eliminated. A second corridor from this hall leads to the electrical department. The old out-patient department has been remodelled and adapted for physio-therapeutic treatment, and contains rooms for all the modern forms of electric massage and light treatment, the old hall itself being used as a gymnasium. The old electrical department has also been reconstructed, and now contains a large room for X ray work with dark room adjoining, as well as accommodation for medical officers, waiting patients, and private treatment. The basement under the new out-patient department is filled with large workshops for instrument makers. These are well lit and ventilated and contain the most modern machinery for instrument work. The front portion of the buildings facing Bolsover-street has a first and second floor; the first floor provides quarters for medical officers, and a large lecture and reading room, whilst the second floor consists of bedrooms for nurses. A further feature is the provision of panel heating, which warms wall and ceiling surfaces, and eliminates pipes and radiators, thereby leaving fewer places for dust and dirt to collect.



Waiting-room of the new out-patient department of the Royal National Orthopædic Hospital.

This hospital has also an in-patient department in Great Portland-street of 200 beds, and a country branch, in itself a fully equipped hospital, only 11 miles away, with over 200 beds. The sum of £40,000 is wanted to complete the extensions at the country branch at Stanmore, which will provide for cases of crippling from infantile paralysis, from birth

deformities and rickets, and from surgical tuberculosis. This was the first hospital in the country to combine education with treatment, and the children on leaving the hospital can compete on equal terms with their more fortunate brothers and sisters.

THE OUTBREAK OF PARATYPHOID IN WEST HERTFORDSHIRE.

THE recent outbreak of paratyphoid B involved parts of the borough and rural district of Hemel Hampstead and the adjoining border of the rural district of Watford. The date of onset of the first case was Oct. 25th, and the majority of cases developed during the first week of the present month, the brunt of the attack falling on the 4th. Up to date 134 cases have been notified; the epidemic is now on the wane as only a few delayed cases have been reported during the past week. The type of fever was early detected by means of the Widal reaction and the clinical features in the early and subsequent cases were characteristic of paratyphoid B.

Immediately the existence of the outbreak became known steps were taken to provide adequate hospital accommodation and to deal with the source of infection. As the notifications came in it became apparent that, although many of the cases were separated by a considerable distance, there was one factor common to all—namely, the milk-supply. Steps were taken to secure the sterilisation of the supply from a certain dairy. This dairy received milk from ten different sources, one of which was pasteurised. The next step was to examine the blood of all those who were in any way concerned with handling the milk at the dairy and to ascertain the conditions obtaining in the nine farms which sent supplies to the dairy, more especially with reference to the presence of any recent case of illness. The results may be summarised as follows:—

1. Two cases of paratyphoid occurred at the dairy, one on the 11th and the second on the 17th. These were immediately removed to hospital.

2. Blood tests showed that the dairyman and five of his roundsmen gave a positive or partially positive Widal reaction. They were all removed to hospital for examination as to whether they were passing *paratyphosus B* in fæces or urine.

3. At one farm a case of illness was discovered, the patient being a child, aged 3½, who subsequently gave a positive Widal reaction. This farm also supplied directly two houses with milk and in one of these houses two cases of paratyphoid occurred. This child, with her mother, was removed to hospital.

It seems that the primary source of infection was the child at the farm who infected the milk supplied to the retailer, and through this induced a secondary source of infection by infecting some of the members of the dairyman's household and his staff. A second farm was under suspicion where there was an ex-soldier who had been in Mesopotamia, but samples of blood gave negative results. All the milk supplied from the nine farms has been examined bacteriologically.

The removal to hospital of over 100 cases was not dictated by the gravity of their condition, but was regarded as an essential precautionary measure. No cases will be discharged until they are proved to be non-carriers of *paratyphosus B*. The general type of the disease was mild although some serious cases occurred; so far there have been no deaths. The onset was acute with high temperature and headache, enlarged spleen, and constipation (occasionally diarrhœa). The paratyphoid exanthem was well marked, spots appearing in some cases on the arms, and proved useful in diagnosis.

ROYAL SUSSEX COUNTY HOSPITAL.—The casualty and emergency departments of this hospital have long been strained to the utmost to meet the daily call made upon them, arising in the main from the modern conditions of transport and motor traffic. A donation of £10,000 has now been given by Mr. Bernhard Baron towards the construction of a new department.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 16TH.

Treatment of Young Offenders.

Mr. CADOGAN asked the Secretary for the Home Department what steps he proposed to take to give effect to the recommendations of the Young Offenders Committee.—Sir W. JOYNSON-HICKS replied: The report of this Committee covers too wide a field to be dealt with fully in an answer to a question, but I will make a short statement. Generally speaking I accept the principles of the Committee's scheme for dealing with neglected children and young persons and with young offenders under 21, though I must not be taken as endorsing all its recommendations, some of which involve difficulties on financial or other grounds. Many of the recommendations do not require legislation. For instance, a great deal can be done by justices under their existing powers to establish juvenile courts on the lines recommended by the Committee. On Sept. 30th I sent out a circular on the subject to every court of summary jurisdiction, and I hope that all justices will take the opportunity of reviewing their procedure in the light of the suggestions made. In London I have appointed a small committee to consider the organisation of the juvenile courts. Some other proposals to which effect can be given by administrative action are being dealt with as quickly as possible. As regards recommendations which involve legislation, I have already given instructions for the drafting of a new Children Bill to amend and possibly to consolidate the Children Act of 1908. This is a task which will take time to complete, but there will be no avoidable delay. It would be premature at the moment to say when it will be possible to introduce a Bill. It is hoped to include not only many of the recommendations of the Young Offenders Committee, but also some of the suggestions of the Sexual Offences Committee concerning child welfare and of the Child Adoption Committee relating to the registration of voluntary homes. Some of the proposals of the Young Offenders Committee would involve considerable expenditure from public funds, and, as the House will readily appreciate, the consideration of these is affected by the financial situation. As I said in answer to a question the other day, I am in favour of Central Remand Homes, but there are difficulties—administrative as well as financial. The Committee did not enter fully into the details of its proposed scheme, but I am taking steps to examine the problem and to ascertain whether anything can be done now, even if only by way of an instalment of a fuller scheme. As regards Borstal institutions, there is already a need for one new institution, and I hope that this may be provided as soon as the financial situation permits. I sympathise with the desire of the Committee to avoid the imprisonment of young offenders under the age of 21, and I propose to explore every avenue which may help to the attainment of this object so far as it is justified and practicable, but there are some cases in which a sentence of imprisonment is called for. Every encouragement is being given to the development of the probation system, and I am considering the best way of extending the resources of that system by the use of hostels on the lines suggested by the Committee and in other directions. The report of the Committee is receiving, as it deserves, the fullest attention.

Importation of Foreign Skimmed Milk.

Sir ARTHUR HOLBROOK asked the Minister of Health whether it was proposed to prohibit the importation of skimmed milk, which was exempted from the standards of quality and purity with which British farmers had to conform, and whether the result of inquiries had established that the skimmed condensed milk so imported was not fit for human consumption.—Sir KINGSLEY WOOD, Parliamentary Secretary to the Ministry of Health, replied: The inquiries which my right hon. friend caused to be made in Holland and Denmark show that the condensed skimmed milk which is imported from those countries is produced under conditions as good as those existing in this country. My right hon. friend is advised that the commodity is certainly not unfit for general consumption, and he cannot take any steps to prohibit its importation on grounds of public health.

Pithead Baths.

Mr. GRUNDY asked the Secretary for Mines the total number of pits with pithead baths and the number of baths provided.—Colonel LANE-FOX replied: Excluding slipper baths, plunge baths, swimming baths, and baths provided for officials only, 32 pithead bath installations had been completed by the end of 1926 and four were in course of construction. The number of bath cubicles in these installations is 1954. I know of at least one additional installation

with 66 cubicles which has been commenced during the present year by the Miners' Welfare Committee, but I shall not have complete returns for 1927 until early next year.

Accidents at Mines.

Mr. GRUNDY asked the Secretary for Mines to give the latest available figures of fatal and non-fatal accidents to persons employed at the mines and the corresponding figures for 1925 and the percentage in both periods to the number employed.

Mr. WILFRID PALING asked the Secretary for Mines to give the number of accidents, fatal and otherwise, in mines from January, 1927, to the last convenient date.—Col. LANE-FOX replied: During the first ten months of 1927 there were 943 deaths from accidents at mines under the Coal Mines Act and 3889 persons were seriously injured. The death-rate per 1000 persons employed was ·91 and the serious injury rate 3·76. The corresponding figures for the first ten months of 1925 were 923, 3607, and ·82 and 3·22 respectively. I regret that comparable figures as regards the less serious non-fatal accidents are not yet available.

Cost of Food in Poor-law Establishments.

Mr. CECIL WILSON asked the Minister of Health the average weekly cost per head for food and drink in the case of children's homes, men and women, respectively, in Poor-law institutions, apart from the hospitals and in asylums.—Mr. CHAMBERLAIN replied: According to returns furnished to me the average weekly cost per inmate for the year ended March 31st, 1926, of the provisions supplied to the inmates of the separate Poor-law establishments for children (other than institutions wholly appropriated to sick children) in England and Wales for which separate accounts are kept, was 4*s.* 7*d.* According to the same returns the average weekly cost per inmate, for the same year, of the provisions supplied to the inmates (men, women, and children) of the general Poor-law institutions (i.e., institutions other than those wholly appropriated to the sick and mentally infirm and establishments for children in cases where separate accounts are kept) was 5*s.* 5½*d.*

Vitamin A and Food Values.

Viscount SANDON asked the Minister of Health whether his expert advisers had examined, and would issue a report on the relative figure value as to vitamin A of sheep and oxen liver fats and the best butter for children.—Mr. CHAMBERLAIN replied: The occurrence of vitamin A in a variety of foods, including ox and pig liver and butter is dealt with in the "Report on the Present State of Knowledge of Accessory Food Factors (Vitamins)," issued by the Medical Research Council. The report does not contain any specific reference to sheep's liver, but I am advised that there is no reason to suppose that this article would differ materially from ox liver.

THURSDAY, NOV. 17TH.

Lease of Bellahouston Hospital.

Mr. BUCHANAN asked the Minister of Pensions if he had yet come to any agreement with the Glasgow Corporation as regards the continuance of the lease of Bellahouston Hospital; if so, for how long; and if he had considered any alternative building for the future.—Major TRYON replied: I am informed that the Glasgow Corporation have resolved that the Ministry's present lease of the site of Bellahouston Hospital be extended to Whitsuntide, 1929. The question of the provision to be made for patients after that date will receive the attention of my department.

Government Lymph Stocks.

Mr. GROVES asked the Minister of Health if he would state what were the original sources of the vaccine lymph stocks at present in use at the Government lymph establishment; what substances were now added to the lymph in the process of manufacture; and whether the lymph material was completely sterilised before being issued so as to secure that it should contain no living disease germ.—Mr. CHAMBERLAIN replied: The records show that the lymph now used at the Government lymph establishment is derived from calf lymph originally obtained from Cologne, and the strain has since been carried on by repeated transference from animal to animal. The substances now added to the lymph are glycerine, distilled water, and oil of cloves. The lymph complies with the standards laid down in the Regulations made under the Therapeutic Substances Act, 1925, but it is not completely sterilised, as otherwise its active principle would be destroyed.

Insured Persons and Dental Treatment.

Mr. WILLIAM M. ADAMSON asked the Minister of Health whether he could give under national health insurance the total number of dental treatment cases and the cost for the six months of the financial year.—Mr. CHAMBERLAIN replied: The complete information asked for by the hon. Member is not available. Certain figures have, however, been obtained from a number of the largest societies, with a total membership of over 6,000,000 insured persons, and these show that during the 12 months from July, 1926, to June, 1927, the number of claims for dental benefit sanctioned by the societies was 571,435, at a cost to the societies of £1,426,832. It is estimated that the total number of claims sanctioned in the year by all approved societies was about 1,100,000 and the cost about £2,500,000.

Old Age Pensioner and Disqualification.

Mr. ROBINSON asked the Minister of Health if his attention had been drawn to the case of Mrs. S. A. Helliwell, of Prescott-terrace, Stainland, Halifax, who had been deprived of her old age pension on the ground that she is an inmate of St. Luke's Hospital, Halifax, a Poor-law institution, despite the fact that she entered the institution on the advice of her private doctor, was a paying patient, and also paid poor and district rates for her private dwelling; and whether he would issue instructions for the old age pension to be reissued with arrears from the date of suspension.—Mr. CHAMBERLAIN replied: An appeal by Mrs. Helliwell against the decision of the local pensions committee, that she has become disqualified for continuing to receive an old age pension by reason of having been an inmate of a Poor-law institution for the purpose of receiving medical or surgical treatment for a period exceeding three months, was received by me on the 12th instant. The case is now under investigation, and a decision will be given as soon as possible.

Horses and Chemical Warfare Experiments.

Mr. CADOGAN asked the Secretary of State for War the number of horses which died in the course of, or had to be destroyed as a consequence of, experiments at Porton chemical warfare station during August, September, and October, respectively; and whether the use of animals in these researches could now be dispensed with.—Sir L. WORTHINGTON-EVANS replied: No horses were used for experiments at the Porton chemical warfare experimental station during the months referred to. As regards the last part of the question, experiments with animals are unfortunately essential in order to obtain the necessary data for ensuring adequate defence against poison gas and for evolving efficient methods of treating gas casualties.

Bodies of Paupers and Anatomical Research.

Mr. DAY asked the Minister of Health whether he had received any protest from boards of guardians in reply to the letter issued by his department asking the boards of guardians to hand over the bodies of paupers who died in their institutions, and who were without friends and relatives, to the medical schools for anatomical purposes; and whether poor and friendless persons were given an opportunity of specifying before they died what should be done with their bodies after death.—Mr. CHAMBERLAIN replied: Some boards of guardians have declined to exercise their powers under the Anatomy Acts, but I am not aware that any protest has been received. As regards the second part of the question, any inmate of an institution may express a desire that his body shall be interred without anatomical examination, and Section 7 of the Anatomy Act, 1832, provides that such a wish shall be respected.

FRIDAY, NOV. 18TH.

Landlord and Tenant Bill.

On the motion for the third reading of the Landlord and Tenant (No. 2) Bill,

Mr. DALTON complained that the measure was small and inadequate. Professional men were wholly excluded from the benefits of compensation for goodwill and they were only brought in as an afterthought and largely as a result of pressure from Members of the Labour Party in Committee. They were brought in to some extent in respect of compensation for improvements, but they were given far less than one-half of that to which they were entitled. The professional man, the doctor, the dentist, and so on, stood to gain very much more from a recognition of his right to compensation for goodwill than from a recognition of his right to compensation for structural improvements, which comparatively speaking such tenants seldom made, and therefore the professional man got next to nothing out of this Bill. But even so small, so miserable, and so paltry a measure would command the support of the Labour Party because they regarded it as the very thin end of a sound wedge. That wedge having been inserted into the law they hoped to drive it in a great deal further in future.

Sir P. PILDITCH said the principal change undoubtedly which the Bill brought about was that in respect of all business premises and also a large number of premises of a residential character occupied by professional men, the whole of the settlement of questions arising between landlord and tenant would be taken out of the region of private arrangement and out of the play of supply and demand and free contract and placed in the hands of the tribunal. He

believed that if the tribunal were used, and if the provisions of the Bill itself were very largely used by landlord and tenant, it would not produce the desired effects. In that event there would be uncertainty in regard to property which had been apprehended by most of those who had suspicions about the Bill, and the general result would be that instead of it doing any good to either landlord or tenant there would be a general rise of rents. He hoped that the Bill would not operate in detail at all, but that it would induce landlords and tenants to come together and appeal neither to the courts nor to the tribunal.

Mr. HARDIE said that with the great development in medical science to-day men in that profession had to have all kinds of electrical and other apparatus, special kinds of baths and lights. In the same way as the ordinary business man they ought to come under this Bill for any good or bad that was in it.

After further debate,

The Bill was read a third time by 149 votes to 64.

MONDAY, NOV. 21ST.

Closing of Pensions Hospitals.

Mr. ERNEST BROWN asked the Minister of Pensions which hospitals had been closed during the four years ending Oct. 31st, 1927; how many ex-Service orderly staff who were ineligible for unemployment benefit had been discharged; whether it was proposed to close any more hospitals during the next financial year; and, if so, how many ex-Service orderly staff would be discharged without any other assistance than that of the local guardians.—Lieut.-Colonel STANLEY (Parliamentary Secretary to the Ministry of Pensions) replied: The number of Ministry hospitals (including treatment and training centres) closed during the four years ended Oct. 31st, 1927, was 19, and the number of ex-Service orderlies ineligible for unemployment benefit thereby discharged was approximately 470. So far as can be foreseen at present, three hospitals will be affected by accommodation changes contemplated during the next financial year. The net total reduction of ex-Service orderlies ineligible for unemployment benefit will probably not exceed 30.

Old Age Pensioners and Medical Treatment.

Mr. GROVES asked the Secretary to the Treasury (1) whether old age pensions were paid to persons who might be in receipt of medical treatment extending over a month in a Poor-law institution; and whether such pension, if payable, should be collected by the next legally responsible person to the ordinary recipient; (2) whether he was aware that during the week ended July 6th, 1917, 117 old age pensioners, who were inmates of various institutions under the West Ham Board of Guardians, had their pensions collected by the said board and applied toward the cost of their maintenance whilst in receipt of medical treatment; and whether, in view of the provisions of the Old Age Pensions Acts, he would prohibit this practice.—Mr. A. M. SAMUEL replied: A person who enters a Poor-law institution for the purpose of obtaining medical or surgical treatment is not thereby disqualified for the receipt of an old age pension until three months from the date of his entry into the institution, if he continues to receive such treatment during that period. It is a fact that the West Ham Board of Guardians, in common with some other boards of guardians, collect the pensions of inmates of their institutions; but in every case the pensioner has signed a form appointing an officer of the guardians as his agent to collect the pension, and there is no authority in the law under which such a practice could be prohibited.

Insured Persons and Specialist Medical Service.

Mr. HORE-BELISHA asked the Minister of Health whether he had now received the recommendations of the consultative council regarding the proposals made by the Royal Commission on National Health Insurance that the scope of the benefit should be extended to include a consultant and specialist medical service, and that the necessary funds for this purpose should be obtained by a partial pooling of future surpluses of approved societies; and what action it was proposed to take.—Sir KINGSLEY WOOD replied: My right hon. friend has now received the views of the consultative council on the proposals referred to by the hon. Member, and they are having his most careful consideration, but he is not yet in a position to make any statement on the matter.

The Indian Medical Service.

Mr. SPOOR asked the Under Secretary of State for India whether he was aware that at a selection test held in August last in India, to select candidates for permanent commissions in the Indian Medical Service, only those candidates holding an English degree were successful; whether, in view of this fact, instructions had been issued by the Secretary of State that those candidates who possessed Indian medical qualifications alone were unfit for permanent commissions in the Indian Medical Service and that for this an English degree was necessary; and whether, in view of the recommendations of the Indian Students' Committee presided over by Lord Lytton in 1921, he could state the position of the Government of India and His Majesty's Government in the matter.—Earl WINTERTON replied: The answer to the first part of the question is in the affirmative and to the second in the negative. Candidates who possess the necessary qualifications prescribed by the regulations, whether they have been obtained in India or in this country, are selected strictly on their merits. As regards the third part of the question, I am not aware of any definite recommendation made by the Committee on Indian students on this subject. I can, however, assure the right hon. gentleman that every effort is being made to improve the standard of medical teaching in India.

Mr. WILFRID PALING asked the Under Secretary of State for India whether it was the policy of the Government of India and of His Majesty's Government to recruit candidates to the Indian Medical Service from Europeans rather than from Indians; and whether he was aware that the expense to the Indian taxpayer was very much heavier in the case of European than in the case of Indian medical men.—Earl WINTERTON replied: Recruitment for the Indian Medical Service is carried out strictly on a ratio of two Europeans to one Indian. This in present conditions has the effect of increasing the number of Indians in the Service. All officers draw the same rates of pay, but those of non-Asiatic domicile receive certain benefits to compensate for permanent service abroad. The additional expense in the case of the European officer is relatively small.

TUESDAY, NOV. 22ND.

Medical Practitioners' Privilege.

Dr. E. GRAHAM LITTLE, in asking leave to introduce the Medical Practitioners' Communications Privilege Bill, said that it was a measure which was intended to remove something like a deadlock which had resulted from a conflict between the regulations issued by a Government department in 1916, and the law as interpreted by certain recent legal decisions. In 1916 the Royal Commission on Venereal Diseases issued its report. Its personnel was admirably authoritative and representative. It included Mr. Philip Snowden, who had done him the honour to put his name on the back of this Bill. Unhappily there was a popular belief that venereal disease was a special order of disease resulting from excessive indulgence in a normal function, that this disease deserved punishment, and that people got it in some mysterious way which differed from other disorders. That view had never been held by the medical profession, and he hoped that it was out of date in this country. In practice venereal disease led to two dissimilar effects—syphilis and gonorrhœa. The report of the Royal Commission showed an unexpectedly high percentage of both diseases in this country. It was established by the evidence given before the Commission that syphilis ranked third as a killing disease, coming after cancer and tubercle. Perhaps it ought to come first, because in many cases it produced the two other diseases. Besides being very mortal, particularly among young children, slaying tens of thousands of victims, it was, with its companion diseases, easily the first of all the disabling diseases known to-day. Syphilis, in particular, was primarily responsible for a large proportion of cases of insanity, and for a long string of diseases of the nervous system which made life a prolonged agony. Evidence was given in the report of the Commission that at least one in every ten persons in our community were affected, and more than half the total number of cases of blindness in young children was due to this curse. The medical position of these cases might be summed up in an epigram of a medical man: "Who knows all about venereal diseases knows all about medicine, because they affect every organ and tissue of the body." The state of affairs disclosed by the report of the Commission was so appalling that immediate action was called for, and was happily taken. In consequence and pursuance of the recommendations of the Commission the Local Government Board, in the same year as the report was published, inaugurated a system of clinics for the treatment of this disease throughout the country, and issued regulations for their conduct. The foremost and most important among these regulations was an instruction to medical practitioners and other persons concerned that all information obtained as regarded any persons treated in these clinics should be regarded as absolutely confidential. The evidence before the Commission demonstrated that it was necessary for the success of any measure for the treatment of venereal disease that the patient should be fully assured of secrecy. The reason was surely obvious. Modern methods of treatment had completely revolutionised the prognosis of this disease, and a condition was that early treatment should be instituted. Irreparable mischief might result, and had resulted, from the disinclination of the victims of the disease to consult their family doctor. The reasons for that were obvious.

It was almost impossible to have the disease treated at home, and to conceal its nature. But the same patient would go to a clinic, where he was identified only by a number, and where he knew that he would get the very best treatment that the medical science of the time could afford. Under the present rules patients went to the clinics and received explicit assurances that no information whatever concerning their disease would be divulged, and that assurance was fortified by the issue of a leaflet, in which the same promise was given, emanating from the Ministry of Health, and carrying with it therefore the authority of Parliament. The success of these clinics rested upon two factors—the enthusiastic coöperation of the medical practitioner in charge, and the complete confidence of the patient treated. That coöperation and that confidence had been abundantly won by the assurance of secrecy. Doctor and patient alike had felt secured by the ministerial regulations from any possibility of being compelled to make any disclosure of these confidential communications. But the security had been completely shattered by the decision, given in Birmingham last July, by Mr. Justice McCardie, when a doctor was ordered to disclose the character of the disease from which his patient was suffering, although he had acted under the explicit protection of the regulations framed by the Ministry of Health. Medical men thus found themselves forced to betray the trust of their patients, and he contended that that betrayal was really an affront to Parliament, because Parliament must be responsible in some measure for the acts of one of its most important Ministers. The position which the Bill sought to remedy was that complete privilege should be given to communications, which had been erroneously supposed for the last 12 years to be privileged. It was clear that either the law must be amended in the way he suggested or that the Ministry of Health regulations must be scrapped. He was encouraged by the opinion of eminent Members of the House that any legal difficulty could be readily overcome. If, however, the regulations were scrapped, the fate of a highly successful and important ministerial and medical effort was sealed.

The sponsors of the Bill were: Dr. Vernon Davies, Sir Walter Greaves-Lord, Mr. E. C. Grenfell, Mr. Arthur Henderson, Mr. F. B. Merriman, Mr. Hopkin Morris, Sir Basil Peto, Mr. Goodman Roberts, Dr. Salter, Mr. Snowden, and Mr. Storry Deans.

Leave was granted to bring in the Bill, which was then read a first time.

Women and Lead Paint Poisoning.

Dr. LITTLE asked the Secretary of State for the Home Department if, since Clause 2 of the Lead Paint (Protection Against Poisoning) Act, 1926, came into force on Nov. 19th, he had made an order under proviso (*b*) authorising women to do special decorative work and other work not being of an industrial character; had he received any representation from women affected by the Act urging the making of an order under Clause 2, proviso (*b*); and would he accede to the request to receive a deputation from women affected by the Act.—Sir W. JOYNSON-HICKS replied: In pursuance of the provisions referred to, I made an order on the 14th instant which will have the effect of allowing women and young persons to be employed in the execution of wall or ceiling paintings or in any similar work of decorative design. Notice of the order, which will be published as a statutory rule and order, has been given in the press, and other steps have been taken to bring it to the knowledge of all concerned. Previous to the making of the order representations in regard to it were received from certain firms of women decorators. The order desired by these firms, however, was of a much wider character than the Act contemplates, and it was impossible for me to give effect to their suggestions. As regards the last part of the question, I have been asked to receive a deputation to protest against the general prohibition in the Act against the employment of women in painting buildings with lead paint, and to press for legislation for the removal of this prohibition. Seeing, however, that the prohibition was enacted by Parliament, after full discussion, so recently as 1926, and that leave was refused in July last by this House for the introduction of a Bill to remove the prohibition, I am not prepared to reopen this question, and I regret therefore I do not see my way ot accede to the request.

OBSERVATION WARDS AT BOW.—The Mayor of Poplar has opened a new maternity and child welfare centre in Wellington-road, Bow. Observation accommodation for ten children is provided in two five-cot wards, with nurses' duty room and milk laboratory adjoining, along with an isolation ward; there are also well-equipped dental and artificial sunlight clinics. Dr. F. W. Alexander, medical officer for Poplar, expressed his belief that the time is not far distant when maternity clinics will all be fitted with diathermy machines.

Medical News.

UNIVERSITY OF LONDON.—At a meeting of the Senate on Nov. 16th, Dr. J. A. Braxton Hicks was appointed as from Sept. 1st, 1927, to the University Readership in Pathology, tenable at the Westminster Hospital Medical School. Dr. Braxton Hicks has worked since 1910 in the Department of Pathology at the School, and since the laboratories were enlarged under the John Burford Carlill bequest he has been their director. He is also bacteriologist to the City of Westminster, and consulting pathologist to the West End Hospital for Nervous Diseases. A gift of 250 guineas has been received from Messrs. J. Lyons and Co., Ltd., towards the establishment of the proposed Chair of Dietetics.

A course of five lectures on the Technique of Bacteriological Research will be given by Dr. F. W. Twort in the theatre of the Royal College of Surgeons, Lincoln's Inn-fields, London, W.C., on Dec. 5th, 7th, 9th, 12th, and 14th, at 4 P.M. Admission is free, without ticket.

UNIVERSITY OF GLASGOW.—The two vacant assessorships in the University Court of Glasgow have been filled by the appointment of Dr. David Murray and Dr. John Freeland Fergus.

ROYAL INSTITUTE OF PUBLIC HEALTH.—It is understood that next year's meeting of the Institute is to be held in Dublin, probably in the month of August. A committee has been appointed to make the necessary arrangements.

ROYAL MEDICAL BENEVOLENT FUND GUILD.—The Duchess of York will attend the May Fair Ball to be held at the May Fair Hotel on Thursday, Dec. 1st, at 10 P.M., in aid of the educational work of the Guild, for which £3000 is urgently required. Further particulars may be had from the hon. secretary, Miss Tweedy, 100, Harley-street, London, W. 1.

COLLEGE OF PESTOLOGY.—Under the chairmanship of the President, Sir William Bull, M.P., the College of Pestology (Incorporated) held its annual dinner on Tuesday last at the Connaught Rooms. The Maxwell-Lefroy gold medal, for the best essay of the year on pest destruction, was presented by Dr. E. Graham Little to Miss Fannie O'Riordan, for her treatise on the extermination of flies; an oil-painting of the late Prof. Maxwell-Lefroy, presented by Miss Blanche Harvey, was shown in the dining-room. In proposing the toast of The Ladies, Mr. A. Moore Hogarth, the chairman of the College, spoke of the part of women in practical pestology, and Miss E. Prentice replied. Among the guests were Sir Thomas Horder, Dr. Leonard Hill, Sir Leslie Scott, K.C., Sir Alfred D. Fripp, and Dr. G. Clark Trotter.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Monday, Nov. 28th, at 5 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., Mr. Harold Chapple will give a lecture entitled Practical Hints in Gynæcology and Obstetrics. On Friday, Dec. 2nd, at 2 P.M., at the National Hospital for Diseases of the Heart, Westmorland-street, Dr. John Parkinson will give a clinical demonstration. The lecture and the demonstration are open to members of the medical profession without fee. From Nov. 28th to Dec. 3rd, at St. Mark's Hospital for Diseases of the Rectum, a post-graduate course in Proctology will be given during the afternoons and some mornings, the course consisting of lectures, operations, out-patient demonstrations, pathological demonstrations, and ward rounds. From Nov. 21st to Dec. 17th, at 5 P.M., the West End Hospital for Nervous Diseases is holding a course in Neurology. From Dec. 5th to 17th, at 2.30 P.M. daily, at the Infants Hospital, Vincent-square, a special course, with lectures and demonstrations, will be held, and between the same dates at the same hour a course in Dermatology will take place at the Hospital for Diseases of the Skin, Blackfriars, consisting of instruction in the out-patient department and special demonstrations. From Jan. 9th to 21st, at the Prince of Wales's General Hospital, there will be a course in medicine, surgery, and the specialties, and between the same dates a course in Diseases of Children at the Children's Clinic. Courses in Cardiology at the National Hospital for Diseases of the Heart, and in Psychological Medicine at the Bethlem Royal Hospital will also be held in January. A general course of work, which may be started at any time and for any period, may be taken throughout the year. Information, syllabuses, and tickets, and specimen copies of the *Post-Graduate Medical Journal*, may be had from the Secretary of the Fellowship at 1, Wimpole-street, London W. 1.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The Alvarenga Prize for 1927 has been awarded to Dr. Emil Bogen, Cincinnati, Ohio, for an essay on Drunkenness.

INNS OF COURT.—Among those called to the Bar on Nov. 17thwas Mr. A. Spong, M.R.C.P., F.R.C.S., who was called at Gray's Inn.

MAUDSLEY HOSPITAL.—Lectures and practical courses of instruction for the Diploma in Psychological Medicine will be given at this hospital from Jan. 4th onwards.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual dinner was held on Nov. 17th at the Piccadilly Hotel, Dr. E. H. Snell presiding in the absence of the President, Dr. James Wheatley. In welcoming Mr. Neville Chamberlain, Dr. Snell said that he was the fifth Minister of Health within eight years, and had held the office longer than any of his predecessors. It would be a good thing if the Minister had greater security of tenure. After long experience as a municipal official, Dr. Snell found increasing difficulty in distinguishing the political proclivities of the parties.

Mr. Chamberlain said that even in these days no one advocated the reduction of expenditure on the preventive medical services, on which the health and prosperity of the people were founded. For efficiency it was important to have the heartiest coöperation between the Ministry and the M.O.H.'s on the one hand, and between the M.O.H.'s themselves on the other. The health organisation in administrative counties rather lent itself to friction, but the various officials must work together in the closest possible relation. Their efforts would never bear the best fruit unless they had the coöperation of the public as well, and he was glad that the society had established a Central Council of Health Education, with a new magazine, *Better Health*, which seemed to be admirably adapted for its purpose. After referring to the value of annual reports, both to the Ministry and to the public, Mr. Chamberlain concluded by urging that M.O.H.'s should do their part in research by analysing the masses of facts in their possession. He instanced vaccination, the period of infectivity of scarlet fever, and the value of disinfection, as subjects for investigation.

Lord Eustace Percy (President of the Board of Education) congratulated the society on having arranged a visit of medical officers from abroad. Nothing, he said, could be more valuable than to strengthen these international links. He pointed out that the medical services of the Board of Education and the Ministry of Health were unified at the centre and should be unified as far as possible at the periphery. The system of medical inspection at three periods of school life was almost complete, and the main task of the future was the preventive treatment of children's diseases and defects. This work was making great progress, and in the two years from 1924 to 1926 the number of minor ailments dealt with had risen from 576,000 to 665,000. During the same period the number of visual defects treated had risen from 160,000 to 190,000, and of ear, nose and throat conditions from 34,000 to 68,000, whilst 852,000 dental cases had been treated in 1926, compared with 654,000 in 1924. The public seemed to fear that a vast horde of officials was being created; the facts were as follows. The so-called army of nurses amounted to one for every 1000 children in elementary schools, 40 per cent. of them being district nurses, 30 per cent. engaged in public health work, and less than 20 per cent. employed as school nurses alone. There was one school medical officer to every 4000 children. Of these officers, 30 per cent. worked part-time only, 47 per cent. were engaged in other branches of public health work, whilst only 20 per cent. devoted their whole time to the schools. There was only one dentist to every 8000 children, and 50 per cent. of them were appointed on a part-time basis. These figures showed (1) that the staff was not extravagantly large in relation to the work to be done; (2) that the services of general practitioners were being widely utilised; and (3) that public health and school work were often combined.

The Chairman, speaking of the rôle of the new Central Council of Health Education, said that many of the present health educational societies could be swallowed up in an earthquake without harm to the community. It was clear that nothing so needed reform as other people's habits. The ideal of the Council was to produce a journal free from stunts and fads. Dr. Snell ended an amusing speech by referring to the constant complaints of the Ministry that his district did not contain the proper quota of the blind, the halt, and the mentally defective. Prof. Bostock Hill proposed the health of the guests, and the Dean of Westminster, Dr. Foxley Norris, who replied, spoke of the way in which the health services had taken over work previously done by the Church. Prof. W. Silberschmidt, replying on behalf of his foreign colleagues of the course of hygiene, expressed a high opinion of public health work in England. There was a place for friendly rivalry between the nations, but the family of medical officers should be international.

WE regret to announce the death of Dr. J. P. Purvis, treasurer of the West Kent Medico-Chirurgical Society.

STAFF OF PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN.—The out-patient department of this hospital will open on Dec. 6th, and beds will be available for in-patients in the New Year. A formal opening ceremony is to be performed by the King and Queen next May if a further sum of £12,000 is raised before then to render this first portion of the hospital debt free. The following appointments to the consulting staff have been made: Consulting physician, Sir William Willcox; consulting surgeon, Sir Herbert Waterhouse; physicians, Dr. P. Montague Smith and Dr. Sydney A. Owen; surgeons, Mr. Neil Sinclair, Mr. R. M. Handfield-Jones, and Mr. Eric Lloyd; assistant physicians, Dr. Douglas Rice-Oxley, Dr. R. C. Lightwood, and Dr. Janet Aitken; assistant surgeon, Mr. Robert Paton; ear, throat and nose surgeon, Mr. G. Douglas Robertson; ophthalmic surgeon, Mr. A. E. Loosely; dermatologist, Mr. Lewes N. Gibbes; anæsthetists, Dr. Ernest F. Travers, Dr. Aileen Chester, and Dr. Audrey Phipps; medical officer in charge of electrical department, Dr. J. F. Carter Braine; radiologist, Dr. H. M. Worth; dental surgeon, Mr. L. Russell Marsh; pathologist, Dr. Robert Donaldson.

PROCEEDINGS UNDER THE LEAD PAINT ACT.—On Nov. 21st the first local case under the Lead Paint (Protection against Poisoning) Act, 1926, came before the Tunbridge Wells borough justices, when a firm of builders was summoned, as employers of persons engaged in painting, for not sending to the district inspector of factories the name and address of its office, contrary to the Act. Mr. C. B. Roos, H.M. Inspector of Factories, in conducting the prosecution, stated that, although not required by law to do so, the Home Office sent a letter on the subject to all employers, and also inserted notices in two trade papers. On Nov. 10th he visited the office of the defendant firm and inspected the time-sheets which showed that there were several men engaged on painting a house. A solicitor for the defence denied the receipt of a notice from the Home Office; and there was the further contention that the Act was obscure inasmuch as no time was provided for compliance with a particular section as was the case with other Acts of Parliament. The justices held that a technical offence had been committed, but as it was the first local case they decided that it should be dismissed on payment of costs. There was another summons against the same firm—for failing to keep for inspection by an inspector of factories at all reasonable times a register in prescribed form of persons employed in painting of buildings; but at the suggestion of the justices, in view of the Home Office object having been achieved in drawing attention to the requirements of the Act by way of the first summons, Mr. Roos withdrew this count. There was a plea of Not Guilty in each case.

IRISH MEDICAL SCHOOLS AND GRADUATES ASSOCIATION.—The autumn reunion of this Association was held at the Savoy Hotel on Nov. 17th, with Sir William Wheeler, the President, in the chair. There was a large assembly of members and guests, many ladies being present at what proved a very enjoyable function. After the loyal toasts had been drunk with musical honours, Dr. Lindsay Rea, in a happy speech, proposed "The Guests." Major-General Sir William Hickie responded and related many anecdotes about the deeds of Irish regiments during the war. He paid special tribute to the medical officers who served in the front line and with the field ambulances. Sir Bruce Bruce-Porter and Dr. William Hill also responded. Dr. Frederick Spicer proposed the toast of the President and Association. Sir William Wheeler, in reply, emphasised the importance of keeping and bringing Irish medical men together, and congratulated the responsible officers on the ever-increasing popularity of the Association. He referred to the admirable action of President Cosgrave's Government in establishing an Irish Medical Council which pleased everybody, in abolishing the union infirmaries, and in the setting up of machinery which would secure that appointments made to county hospitals should be no longer affected by local influence, but only by the real qualifications of a candidate for his job. There was an excellent musical programme, and the songs of Mr. Patrick Hughes and Miss Mabel Moore called for many encores. Miss Daci O'Niell acted as accompanist. One of the objects of the Association is to give opportunities for members to meet each other in pleasant circumstances, and the dinners, which are held in London twice a year, are well attended. The first takes place after the annual meeting on St. Patrick's Day, March 17th, whilst the second is held regularly on the third Thursday in November. The hon. secretary is Dr. F. R. Holmes Meyrick, 59, Kensington-court, London, W.8, to whom application may be made for membership.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 28th.—8 P.M., ODONTOLOGY. Mr. Bayford Underwood: Case of Pain and Swelling in Submaxillary Gland Caused by Pressure of Denture. Mr. Ivan S. Spain: The Uses of Nitrous Oxide and Oxygen in Dentistry.

THURSDAY, Dec. 1st.—8.15 P.M., TROPICAL DISEASES. Symposium on Technique by various speakers.

FRIDAY.—5 P.M., LARYNGOLOGY. (Cases at 4 P.M.). Discussion on Deep X Ray and Radium Therapy in Relation to the Mouth and Upper Respiratory Tract. Speakers: Dr. W. L. Watt and Dr. Finzi. Cases: Only cases bearing on the subject will be shown. ELECTRO-THERAPEUTICS: It is hoped that Members of the Section of Electro-Therapeutics will join this Discussion.—8.30 P.M., ANÆSTHETICS. Paper: Dr. T. P. Dunhill: Anæsthesia in Thyroid Surgery.

SATURDAY.—10 A.M., OTOLOGY. (Cases at 9.30 A.M.) Papers: Mr. Somerville Hastings and Mr. Gordon R. Scarff: Some Notes on Paracusis Willisii from the Ferens Institute of Otolaryngology. Dr. Dan McKenzie: Posterior (Mastoid) Drainage in Acute Suppuration of the Middle Ear. Cases: Dr. Russ Wood: Notes on a Case of Otitic Septicæmia. Dr. Leslie Powell: Case of Acute Otitis Media with very rapid Involvement of Lateral and both Cavernous Sinuses. Cases will also be shown by Sir James Dundas-Grant and others.

MEDICAL SOCIETY OF LONDON.

MONDAY, Nov. 28th.—8.30 P.M., Discussion on the Medical Society's Report on "The Late Results of Operation for Carcinoma of the Breast," introduced by Mr. T. P. Legg.

ROYAL SOCIETY OF ARTS, 1, John-street, Adelphi, W.C.

WEDNESDAY, Nov. 30th.—8 P.M., Prof. Henry E. Armstrong: Marcellin Berthelot and Synthetic Chemistry.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 28th, to SATURDAY, Dec. 3rd.—NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W. Special Clinical Demonstration by Dr. John Parkinson on Friday at 2 P.M.—FELLOWSHIP OF MEDICINE LECTURE, Medical Society, 11, Chandos-street, W. Mr. Harold Chapple on Practical Hints in Gynæcology and Obstetrics, at 5 P.M., on Monday, Nov. 28th. The above are free. ST. MARK'S HOSPITAL, City-road, E.C. Post-graduate Course in Proctology, occupying every afternoon and some mornings with Operations, Lectures, Out-patient Demonstrations, Pathological Demonstrations, and Wards.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Post-graduate Course in Medicine, Surgery, and Gynæcology. Afternoons and some mornings. Third week.—WEST END HOSPITAL FOR NERVOUS DISEASES, Welbeck-street, W. Post-graduate Course in Neurology. Every afternoon at 5 P.M. for four weeks. Further information from the Secretary, Mayfair 2236.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Nov. 28th.—2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

There will also be a special demonstration of Surgical Cases on Monday, Nov. 28th, at 2 P.M., and of Eye Cases on Wednesday, Nov. 30th, at 2 P.M., by Mr. Ralph Coyte and Mr. N. B. B. Fleming respectively.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith-road, W.

MONDAY, Nov. 28th.—2 P.M., Mr. Donald Armour: Operations. 2 P.M., Dr. Trevor Davies: Gynæcological Out-patients. 2 P.M., Mr. Addison: Surgical Wards.

TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 2 P.M., Mr. Addison: Operations. 4.30 P.M., Dr. Dowling: Preservation of a Youthful Skin (lecture).

WEDNESDAY.—10 A.M., Dr. Owen: Children's Department. 10 A.M., Dr. Burnford: Medical Wards. 4.30 P.M., Dr. Carter Braine: X Ray Therapeutics (lecture).

THURSDAY.—11 A.M., Resident Assistant Surgeon: Ward Demonstrations. 2 P.M., Mr. Simmonds: Surgical Out-patients. 3 P.M., Sir Henry Simson: Gynæcological Ward Visit.

FRIDAY.—11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Dr. Shaw: Medical Out-patients. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Department.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Owen: Medical Diseases of Children.

Daily, 10 A.M. to 5 P.M., Saturdays, 10 A.M. to 1 P.M., In- and Out-patients, Operations, Special Departments.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Nov. 29th.—5 P.M., Dr. A. Whitfield: Tuberculosis Cutis (2).

THURSDAY, Dec. 1st.—5 P.M., Dr. Haldin-Davis: Acne Rosacea.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, Nov. 29th.—3.15 P.M., Mr. G. G. Penman: Some Common Eye Conditions of Childhood.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, Balham.

THURSDAY, Dec. 1st.—4 P.M., Dr. W. J. O'Donovan: Clinical Demonstration of Dermatological Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Dec. 1st.—4 P.M., Dr. A. M. H. Gray: Infantile Eczema.

PEOPLE'S LEAGUE OF HEALTH.

THURSDAY, Dec. 1st.—6 P.M. (at 11, Chandos-street, Cavendish-square, W.), Prof. H. R. Kenwood: Hygiene.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

WEDNESDAY, Nov. 30th.—4 P.M., Prof. Blair Bell: Prevention of Cancer.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

TUESDAY, Nov. 29th.—4 P.M., Dr. Edmund Spriggs: Early Symptoms of Cancer of the Stomach. Discussion to be opened by Dr. Bryson.

FRIDAY.—4 P.M., Case reading and discussion, in which all medical practitioners are invited to take part.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES.

TUESDAY, Nov. 29th.—4.15 P.M., Dr. D. E. Core: Disturbances of Sleep.

FRIDAY.—4.15 P.M., Dr. W. M. Roberts: Gastric Analysis in Clinical Medicine and Research.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.

FRIDAY, Dec. 2nd.—3.30 P.M., Mr. Graham Simpson: Surgical Cases.

Appointments.

CORSI, HENRY, F.R.C.S. Eng., has been appointed Physician in charge of the Department for Diseases of the Skin, Willesden General Hospital.

Vacancies.

For further information refer to the advertisement columns.

All Saints Hospital for Genito-Urinary Dis., Vauxhall Bridge-road, S.W.—Res. Sen. H.S. and Non-Res. Jun. H.S. At rate of £200 and £150 respectively.

Barnsley, Beckett Hospital and Dispensary.—H.P. At rate of £140.

Brighton, New Sussex Hospital for Women and Children.—Hon. Asst. S.

Cambridge, Papworth Village Settlement.—H.P. At rate of £100. Also Res. M.O. £350.

Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.

Cardiff Royal Infirmary.—Cas. Surg. O., H.S. to Aural Dept., H.S., and 2 Res. Anæsthetists. Each at rate of £50.

Cheadle Barnes Convalescent Hospital.—Res. M.O. £250.

Derbyshire Royal Infirmary, Derby.—Ophth. H.S. £150.

Dublin, Mercer's Hospital.—Hon. Asst. Surg.

Durham County Council Education Committee.—Asst. School M.O. £600.

Eastbourne, Princess Alice Hospital.—Sen. and Jun. Res. H.S.'s At rate of £125 and £100 respectively.

Hospital for Sick Children, Great Ormond-street, W.C.—Asst. Pathologist. £400. H.P. and H.S. At rate of £50. Also Med. Reg. £250.

Hull, Tuberculosis Sanatorium, Cottingham, E. Yorks.—Res. M.O. £485.

Hull and Goole Port Sanitary Authority.—Asst. M.O.H. £750.

Ipswich, East Suffolk and Ipswich Hospital.—Res. M. and S.O. £350 if single; £500 if married. Also vacancy on Visiting Staff for X ray, &c.

Leeds, City of.—Asst. M.O. for Maternity and Child Welfare. £600.

Lerwick, Gilbert Bain Memorial Hospital, &c.—Surg. and Consultant. £700.

Liverpool County Borough Local Education Authority.—Jun. Asst. Sch. M.O. £600.

Liverpool School of Tropical Medicine.—Lectureship in Tropical Sanitation and Hygiene. £500.

London Jewish Hospital, Stepney Green, E.—Hon. M.O. for Dept. for Dis. of Skin.

London Lock Hospital, 91, Dean-street, W.—H.S. At rate of £200.

Manchester, Northern Hospital for Women and Children.—Hon. Asst. Surg. Also Sen. H.S. and Jun. H.S. £130 and £100 respectively.

Manchester Royal Children's Hospital.—Radiologist. £250.

Melton, Suffolk, St. Audry's Hospital for Mental Diseases.—Jun. Asst. M.O. £300.

Metropolitan Hospital, Kingsland-road, E.—Phys. to Dept. for Diseases of Skin.

North Middlesex Hospital, Edmonton, N.—Visiting Throat S. 3 guineas per session.

Oldham Royal Infirmary.—Two H.S.'s. Each at rate of £175.

Perth Infirmary.—Sen. H.S. £250.

Plymouth County Borough.—Asst. M.O.H. £750.

Prince of Wales's General Hospital, N.—Hon. Clin. Assts.

Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Asst. Res. M.O. At rate of £80.

Queen Mary's Hospital for the East End, Stratford, E.—Res. M.O., H.P., H.S.'s., &c.

Reading, Royal Berkshire Hospital.—H.P. At rate of £150.

Richmond, Surrey, Royal Hospital.—Hon. Pathologist

St. Marylebone Hospital, Ladbroke-grove, W.—Third Asst. M.O. £300.

Salford Union Infirmary, Hope, Pendleton, Salford.—Two Asst. Res. M.O.'s. Each £275.

Shanghai Municipal Council, Public Health Dept.—Asst. Radiologist. £1050.

Sheffield Royal Infirmary.—Two H.S.'s., Asst. Cas. O., and Jun. Aural and Ophth. H.S. Each at rate of £80.

Sierra Leone, School Laboratory, Freetown.—Two Research Assts. Each £600.

Staffordshire General Infirmary, Stafford.—H.S. At rate of £200.

Swansea Hospital.—H.S. to Ophth. and Aural Depts. £150–£200.

Todmorden Borough.—M.O.H. and S.M.O. £800.

Wallasey, Victoria Central Hospital.—Sen. and Jun. H.S.'s. £150 and £100 respectively.

West London Hospital, Hammersmith, W.—H.P., H.S., Res. Asst. Cas. O., and Aural and Ophth. H.S. Each at rate of £100. Also Radiographer. £250.

Windsor, King Edward VII. Hospital.—Jun. H.S. At rate of £100.

The Chief Inspector of Factories announces the following vacant appointment for Certifying Factory Surgeons: Maidstone (Kent).

Births, Marriages, and Deaths.

BIRTHS.

COYLE.—On Nov. 10th, at a nursing home, Dublin, the wife of Cecil D. Coyle, M.B., of a daughter.

WELLS.—On Nov. 18th, at West Bar, Banbury, the wife of Dr. C. J. L. Wells, of a daughter.

MARRIAGES.

CRONK—SHARP.—On Nov. 14th, at St. Stephen's, Hampstead, N.W., Herbert George Cronk, M.B., to Mary Sharp, late of Sarawak.

MAYBURY—KAINES.—On Nov. 19th, 1927, at the Church of St. Mary-the-Virgin, Primrose Hill, N.W., by the Rev. Father Edward Wynn, O.G.S., Dean of Pembroke College, Cambridge, Lysander Montague Maybury, M.A., M.B., B.Chir. Camb., D.T.M. & H. Eng., eldest son of Dr. and Mrs. Lysander Maybury, of Southsea, to Florence Edna Kaines, daughter of Mr. and Mrs. H. Johnson Kaines, of Guernsey. Nuptial High Mass was sung by the Rev. A. S. Duncan-Jones, M.A., Vicar of St. Mary's, assisted by the Rev. Colin Dunlop, M.A., and the Rev. Leonard Williams, B.A.

MITCHESON—WALKER.—On Nov. 16th, at St. Mary Abbot's, Kensington, Victor S. Mitcheson, B.A. Camb., M.R.C.S., L.R.C.P., to Mildred Mary, only daughter of J. E. and Mrs. Walker, of Keswick.

DEATHS.

COWELL.—On Nov. 18th, at 23, Nevern-square, S.W., George Cowell, F.R.C.S., Consulting Surgeon, Westminster Hospital, aged 92.

PURVIS.—On Nov. 18th, at "Thornhill," 16, The Grove, Greenwich, John Prior Purvis, M.R.C.S., L.S.A., in his 87th year.

WHITELOCKE.—On Nov. 19th, at Oxford, Richard Henry Anglin Whitelocke, M.D., F.R.C.S., in his 67th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

ENFORCEMENT OF VACCINATION LAWS IN COUNTY WEXFORD.

DEBATE IN THE DAIL EIREANN.

ON the motion for adjournment of the House on Nov. 24th Mr. M. J. JORDAN raised the question of the enforcement of the vaccination laws in County Wexford, arguing the case from the ratepayers' point of view. These laws had, he said, been in abeyance in the county for the last 20 years. There were now at least 17,000 defaulters, and the expense of serving notices and of doctors' fees would amount to £2550, apart from the cost at £5 per case of prosecuting, say, 5 per cent. of those who refused to comply.

General MULCAHY (Minister for Local Government and Public Health) asked the Deputy to develop the point as to who was going to bear the expense of an outbreak of small-pox if such should occur.

Mr. JORDAN: The fact remains that for the past 20 years the vaccination laws in Wexford have been in abeyance and no case of small-pox has broken out.

Sir JAMES CRAIG read a letter stating that £7,000,000 would be the price the British nation would have to pay during the year 1928–29 for dealing with small-pox if the present rate of increase were continued. Vaccination, he said, was in the nature of an insurance.

Dr. RYAN remarked that the big grievance in Wexford was that there was no conscientious objection clause, as there was in England. The people of Wexford were not prepared to see their children suffer. There was nothing political or what you might call antigovernment in the thing.

General MULCAHY said that he could not hold out any hope that he would not do everything possible to enforce the vaccination laws. The Free State was in the happy position since perhaps 1908 of having had only 11 cases of small-pox, and owing to the vigilance of the public health authorities these cases had been dealt with without the infection spreading. But during last year Britain had had 90 per cent. of the small-pox cases that existed in Europe and the danger of an extensive and dangerous outbreak spreading thence was serious. They had no assurance that the mild form of small-pox existing in any particular area would not develop into the virulent form, and it had not been suggested that the medical basis upon which the vaccination laws were framed was unsound. It had been argued that the administration of the laws in Wexford would cost a considerable amount, but the total legal expenses in New Ross since the urban district council had taken over from the guardians the administration of vaccination had only amounted, including 38 cases of default, to £21 14*s.* 7*d.* On the other hand, small-pox in Monmouthshire had already cost the ratepayers £10,000 in capital expenditure and equipment, while the maintenance of 200 beds for six months would mean another £13,000. There was no reason, if the danger were clearly shown, why the Wexford people should not be as sensible as any others. He could assure them that infantile vaccination was going to protect the children of the country up to the age of 12 years practically completely against the danger of small-pox. The Government had a duty to the people to prevent small-pox being brought over from England and developing in the country, and they were prepared to carry out that duty. "If there is a feeling," he said, "that there is not a sound medical basis to our present vaccination laws, we ought to have the position stated from the medical point of view. Do not let us act blindly in the dark because someone said antivaccination was always connected with the national movement in Ireland."

SICKNESS AND LIFE ASSURANCE FOR MEDICAL MEN.

AT the annual meeting of the Medical Sickness, Annuity, and Life Assurance Society, Ltd., on Nov. 14th, the chairman, Dr. F. J. Allan, was able to report that in spite of industrial disputes and influenza epidemics, the Society was in an improved position. That the medical and dental professions appreciated its soundness was evident, he said, from the fact that the premium income on the sickness fund was larger than the premium income of any other company doing permanent sickness insurance in this country. The Society endeavoured to treat its members fairly and he was pleased to say that it had never gone to law or even had to refer a claim to lawyers. The feature of last year's business had been that although the amounts insured were greater the actual new premiums were smaller because a large number of younger men had come in soon

after qualification and were therefore entitled to rebates on their first and second years' premiums.

Although medical men are constantly in touch with illness in persons of all ages, there are many who, especially when they are young, do not entertain the possibility that they themselves may become patients. That this view is short-sighted is shown by the fact that 24 per cent. of the Society's members come on the funds each year, whilst there are about 50 members who have been incapacitated for a long time, one of them having drawn benefit for 24 years. It is stated that in each year 19 out of every 1000 members undergo operation.

The Society's sickness fund at present amounts to £333,712, whilst only £245,071 is required to meet its liabilities. A new method has now been adopted for the distribution of the surplus, based on the complaint that a member may pay for sickness benefit for many years but never gets any cash return for his money unless he is ill. In the past the surplus has been distributed by offering a rebate to members on their annual premiums, but this has not proved wholly satisfactory, and in future the bonuses declared will be allowed to accumulate for the benefit of the member, and will be given him in a lump sum when he reaches the attainment age. Assuming that the Society's position is maintained, a man aged 30, who takes out a sickness policy for 5 guineas a week should receive a cheque for over £130 on closing the policy at the age of 65, besides any sums he may have drawn out in benefit in the interval. The advantages of the Society's life assurance policies may be shown by another example. A man aged 30, who effects a policy for £1000 payable at the age of 65, or at his previous death, will be asked to pay a premium of £25 6s. 8d. a year for 35 years—i.e., a total of £886. With income-tax rebate on the present scale the actual cost will be £798, but assuming that bonuses continue to be declared by the Society at the same rate he will receive at 65 the sum of £1350, which is equivalent to a return of all he has paid plus £552.

Of special interest to the young practitioner are the Society's schemes for assistance in the purchases of a house or a practice. The Society is in a strong position and is able to offer good terms in many directions because it caters only for the medical and dental professions (who are good clients from the point of view of honesty and health), and because its overhead charges are low.

ARTIFICIAL DEFORMATION OF THE SKULL.

To the Editor of THE LANCET.

SIR,—In my recent note on artificial cranial deformation (THE LANCET, Nov. 5th, p. 1001) I referred to an artificially deformed skull published in 1918 by Dr. G. Sobhy, but my attention has since been called to the fact that the gravest doubt must attach to the authenticity of that author's statements. He stated definitely that the skull was in possession of Dr. L. Gatineau, and that it was found in a tomb at Tell el Amarna (a statement which, if true, would definitely associate the skull with the reign of Akhenaten), but I have since ascertained that Dr. Gatineau himself afterwards published the identical skull as having been found by himself during excavations in a Coptic burial-ground of the Christian period at Medall, near Fachre, in Upper Egypt (La Semaine Dentaire, Jan. 22nd, 1922). I am endeavouring to ascertain the truth of the matter, but in the meantime I wish to withdraw any conclusions that may depend upon the authenticity of this skull. My original suggestion, however, that the heads of Akhenaten's children may have been deliberately deformed in imitation of their father's is not affected by eliminating from the discussion the skull mentioned above, for my note was intended to be no more than a tentative suggestion.

I am, Sir, yours faithfully,

WARREN R. DAWSON.

Palace Mansions, W., Nov. 19th, 1927.

PNEUMOCOCCI IN MICE.

IN a recent paper Dr. F. A. Coventry [1] has published the results of his investigation of the course of Type I. pneumococcal infections in mice by plating samples of blood at intervals. He considers that this method gives a more accurate record than that based only on survival time. In series of mice to which gradually increasing doses of whole Type I. antiserum and a constant dose of pneumococcal culture were injected simultaneously, plate cultures showed some bactericidal action on the organisms even when the survival time was not lengthened. As the dose of serum was increased alternate recurring zones of protection and partial protection were shown, but there were no zones of complete inaction as had been previously suggested. For example, with a constant dose of culture, 0·1 to 0·4 c.cm. of serum (per 20 g. body-weight of mouse) completely protected the animals. Somewhat higher doses did not. Still higher doses—1·4 to 1·8 c.cm.—gave complete protection and doses above that showed protection in some cases but not in others. Similar results were found to follow Felton's concentrated antibodies instead of serum and this gave fewer cases of partial protection than did whole serum. Experiments on the curative action of concentrated antibodies in which the injection were made four hours after the dose of pneumococci showed that, although there was some initial inhibitory action in all cases, this was small when large doses (10 million M.L.D.) of pneumococci were used. When the dose was reduced, however, to 1 million M.L.D. complete protection was afforded by antiserum both in protective and curative experiments. No final explanation of these phenomena can at present be given, but the results are interesting in view of the fact that Type I. is the only pneumococcus for which an antiserum of even moderate efficiency in man has been prepared. To have any effect in lobar pneumonia due to this type the serum must be given as early as possible, in large doses and preferably by the intravenous route. Until a means has been found of preparing this serum in a more concentrated form it is unlikely to become a common therapeutic agent.

[1] The Protective and Curative Action of Large Doses of Pneumococcus Antiserum in Mice. By F. A. Coventry. American Journal of Hygiene, Sept. 1927, vol. vii., No. 5, pp. 515–541.

NEEDLES FOR RECORD SYRINGES.

THE new "Summit" needle possesses distinct advantages. The old difficulty of having to thread the wire through the point has been overcome, and the wire can be passed easily from the cone end by means of a converging bore. The needle is so constructed that it cannot become dislodged from the cone, the junction being fluid-proof. It is easily picked up and held as the cone has concave surfaces. The needles are made in all the standard sizes and sold in packets of a dozen, fixed to a metal plate to prevent the point from being rubbed. The needles may be had from all surgical instrument houses. Details are obtainable from Messrs. Van Lier Bros., Ltd., 3, Eden-street, London, N.W. 1.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—Recently my attention was drawn to an advertisement issued by a firm of manufacturing chemists, in which a passage from a paper published by me in the medical press was introduced in such a way as to leave the impression that one of their preparations was recommended by me. I had no knowledge of the preparation advertised, and the use of my name was entirely unauthorised. Following a protest made by me the quotation has been withdrawn from the advertisement, but the company decline to offer any apology for their action.

I am, Sir, yours faithfully,

DOUGLAS GUTHRIE.

Rothesay-place, Edinburgh, Nov. 21st, 1927.

*** Our correspondent is justly incensed at the employment of his name in any way that might give colour to the impression that he had behaved unethically.—ED. L.

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